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Public Health and Civil Defense in Great Britain During the War*

W. M. FRAZER, O.B.E., M.D., M.Sc.

Medical Officer of Health, City and Port of Liverpool; Professor of Hygiene, University of Liverpool, Liverpool, England

THE point of view which I shall express in this communication is that of the medical officer of health of a large English city and port through which many of your nationals have passed when visiting Great Britain and Europe in peace time, and through which Americans are still passing for other and grimmer purposes. It was laid down by the Ministry of Health and the Ministry of Home Security early in 1939 when our air raid precautions schemes were commencing to take shape, that the medical officer of health should be responsible for such civil defense services as emergency ambulances, first aid posts, first aid parties (stretcher bearers), mortuaries, and the emergency extensions of the local authority's hospitals. He is, in fact, in charge of the casualty services, being responsible for the care of the injured, and the disposal of the dead, and, in addition, is associated with a number of other services which have been established to deal with various difficulties arising both from the effects of air raids and from the upset to the life of our crowded urban populations due to movements of the population in furtherance of the war effort. Thus, medical arrangements are required in connection with the larger public shelters, with rest centers, evacuation schemes for school children, expectant mothers and blind persons, and to supervise day and residential nurseries for the children of mothers engaged in the war factories which have been established in all industrial parts of the country. All these arrangements for dealing both with actual casualties from air raids and with the multifarious difficulties of the civilian population under war conditions were made under general instructions issued by the Ministry of Health and Ministry of Home Security and followed a pattern which was therefore common to the whole of Great Britain, such slight differences as existed being due to local circumstances. Our arrangements in Liverpool in air raids were accordingly similar to those

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of other urban areas which were heavily bombed during the period from August, 1940, to May, 1941; and my observations on the subject in this paper, although arising from experience in Liverpool, apply to a considerable extent to other parts of the country.

Let us consider the situation as it was in any urban area in Great Britain likely to be subjected to heavy bombing, in early August, 1940, just before the onset of air raiding. Take first of all that indefinable quality of the communal spirit termed morale. That it was high was not, I think, due to ignorance of the terrible effects of heavy bombing, because morale remained satisfactory even after months of attack had caused severe damage to many industrial areas and had taken heavy toll of human life. The courage of our population in such circumstances had its origin in a complex of factors among which are clearly discernible a profound conviction of the justice of the cause in which we were engaged and a feeling of confidence in the government, and especially in the Prime Minister, Mr. Churchill, whose speeches at that time, sometimes given over the wireless, were a source of great inspiration to the average man and woman called upon to face the imminent horrors of air bombardment. But we had other sources of consolation—the support of the Dominions, the friendship and material help of the United States, and the feeling of comradeship which rapidly strengthened between all classes in the community called upon to face together a common peril. At that time—early in August, 1940, before air raids had commenced in earnest—our civil defense services were in an advanced state of preparation but were by no means complete, and large numbers of people were voluntarily serving as wardens, ambulance drivers, stretcher bearers, fire-watchers, telephonists, and the like. The fact that unlimited opportunities for service were available was a fortunate circumstance and it had a profoundly favorable influence upon civilian morale. I hope I may be allowed to speak from personal experience when I say that there is nothing which sustains one's courage and fortitude during an air raid so much as doing a job and forgetting about the air raid.

Another favorable circumstance was the fact that we in Great Britain had been led to expect that air raids were going to be made in overwhelming force at the outset of the war, and provision was actually made for dealing with many thousands of casualties in the large centers of population. You may judge of our surprise in Liverpool, for example, when the first raids happened and we found that casualties were counted, not in thousands or hundreds, but only in scores. It almost looked as if the size of the Luftwaffe was a product of the German propaganda machine rather than of their factories. But that comparatively happy situation did not continue after the first few months, and later we experienced very severe raiding with large casualty lists; and when that began to happen our civil defense personnel had been thoroughly trained in the hard school of war, shelters had been rapidly increased in number, and the arrangements for caring for the many homeless people after a night's air raid had reached a satisfactory degree of efficiency.

Another circumstance favorably affecting the health and morale of the community was the excellence of the food supply. Prior to the outbreak of war the Government had set up a branch of the Board of Trade under Sir Henry French to consider the question of the nation's food in the event of war, and to work out the complicated and detailed administrative arrangements for the early rationing of certain of the principal foodstuffs such as meat, fats,

and sugar in the event of hostilities occurring. This branch was expanded and took shape as the Ministry of Food in 1939 on the outbreak of war, and almost immediately rationing of meat, sugar, fats, and tea was introduced. At first rationing was limited to these articles of food, and the scale was a generous one, but as time went on other foodstuffs were rationed, and today all important foodstuffs are dealt with under the rationing system except bread, potatoes, and vegetables, of which unlimited amounts can be obtained. In spite of moderately severe rationing it can be said with confidence that the population of Great Britain is today in all respects adequately nourished, and this expression of opinion applies to children as well as to adults. Children are, in fact, well looked after from the dietetic point of view, having a larger milk ration than the adult, while babies under the age of 3 years receive fruit juice concentrates, such as black-current puree and rose-hip juice, as well as the additional milk ration. Vitamin C deficiency has only exceptionally occurred among the infant population of Great Britain during this war, although in 1914–1918 it was relatively common.

The activities of the Ministry of Food are not, however, restricted to the importation of food and the imposition on the population of a rationing system. This department, under the leadership of Lord Woolton and guided by the advice of Professor Drummond and Lord Horder, has shown great wisdom in arranging for cheap and nutritive meals to be available for all workers at canteens for which food is provided apart from the ration. Mobile canteens, some of which have been sent through the generosity of voluntary societies in the United States, supply food to workers in isolated places and to civil defense personnel during long air raids. A system of National Kitchens has also been developed under the auspices of local authorities, where meals can be obtained by any persons requiring them, again without the surrender of ration coupons. The principle underlying these arrangements is that the supply of food cooked in large quantities at communal kitchens is an economy because both fuel and time are saved and variety is more readily obtained, while some of the hardships imposed on very small families by the rationing system are mitigated. Another provision made by the Ministry of Food, which has had favorable results from the public health point of view, has been the introduction of a national wheat flour of 85 per cent extraction to replace the white flour previously almost universally in use in Great Britain. This flour, from which appetizing bread and moderately satisfactory cakes are made, contains nearly three times as much of the main items of the vitamin B complex, nearly three times the amount of iron and more than twice the weight of mineral salts as are contained in white (73 per cent extraction) flour.

Looking back on the Ministry of Food's policy during the last three years, the judgment may be fairly expressed that the population of Great Britain has been kept in a state of adequate nutrition, and health and working capacity have been well maintained, even if luxuries have, perforce, had to be abandoned. There has been a levelling of food consumption since, except for the black market which has never attained large dimensions, both rich and poor enjoy practically the same diet. It is true, of course, that the rich are poorer because of heavy taxation and the poor richer because unemployment has disappeared and wages are relatively high; and the final result of this economic change, under the rationing system, is that every class in the population is being fairly treated from the rationing point of view, so that there is widespread satisfaction with the

way the Ministry of Food has performed its task.

Especially noteworthy has been the coöperation existing between the Ministry of Food charged with the duty of distribution, and the Ministry of Agriculture whose duty it is to encourage the production of food. Under the guidance of the latter Ministry, farmers have brought under cultivation many millions of additional acres of land, milk production has increased, and the people, both in the towns and in the country, are using all the available space in their gardens in order to grow potatoes and vegetables. Great Britain during the past two or three years has become a nation of gardeners. All are helping, all are interested, and there is keen competition between neighbors to produce the finest peas, potatoes, lettuce, and tomatoes. The net result of all these activities is that Great Britain, for the first time in her recent history, is producing at home about two-thirds of the food she consumes; much shipping space is thereby saved and an adequate supply of the protective foods is insured, to the great advantage of the health of the community.

In order to keep in touch with the situation in regard to nutrition in the country, the Ministry of Health has initiated surveys which are being assisted by two expert medical officers supplied by the International Health Division of the Rockefeller Foundation.

The next factor influencing the public health in Great Britain during the present war is that of movements of population proceeding in ever increasing measure during the past three years. These movements, defensive in character as regards the evacuation of children from crowded urban districts to small towns and rural areas, but offensive and directly related to the war effort in the call-up of man power and woman power to the services and to factories, have now assumed large proportions; and have, of course, created many sociological, ethical, and epidemiological problems. It is with the latter that we are mainly concerned. That population has altered to a considerable extent is shown by the experience of one large urban area—perhaps not an entirely typical one—where today the number of civilians is only two-thirds of the corresponding figure three years ago. Apart from the regular services—the Army, Navy, and Air Force for men and the A.T.S., W.A.A.F. and W.R.N.S. for women—such activities as factory work, labor at the docks, the National Fire Service, the Women's Voluntary Service, and the Civil Defence Service have all caused internal movements of the population and, except in the case of the armed forces, the trend has on the whole been toward, rather than away from, the larger cities.

The epidemiologist, bearing in mind the historic consequences of movements of population under adverse sanitary conditions and in a different age, tended, before 1939, to view the population changes, inevitable in wartime, with some apprehension. And, indeed, in one or two respects, his pessimism has been justified as far as Great Britain is concerned since experience has shown that three diseases, two major and the other minor, have largely increased as a result of the war, although, speaking generally, the epidemiological situation has been satisfactory.

One of the major conditions referred to is venereal disease which is spreading with some rapidity in Great Britain, especially, of course, in the port areas and industrial towns. In Liverpool the incidence of cases of syphilis attending for treatment at the venereal diseases clinic is about four times what it was before the war, and twice in the case of gonorrhea. Other large ports return a similar increase. In spite of the widespread provision of treatment facili-

ties in all areas, venereal diseases are taking a severe toll in terms of human health and happiness, marital infection being an almost unavoidable consequence. This evil of the spread of venereal disease during the war is well known throughout the country and is being urgently discussed in official circles and in various voluntary societies which are interested in the social condition of the people; but, as we are all aware, the problem of prevention of a disease arising from sexual relations presents features which go far beyond the domain of public health and epidemiology. Because questions of ethics, religion, and law are involved, the subject of the prevention of venereal diseases has seldom, at least in Great Britain, been examined in the impartial and scientific way in which the hygienist would discuss, for example, the subject of immunization against diphtheria, and as a consequence while progress in treatment has been outstanding, progress in regard to prevention, even on the propaganda side, has been very slight.

It is recognized, of course, that, next to the avoidance of risk altogether, early treatment, by rendering the patient non-infectious within a period of days in the case of gonorrhea and weeks in the case of syphilis, is the best method of prevention available. But in Great Britain, at least at present, the attempt at solving this serious public health problem ceases with the provision of full treatment facilities for both sexes, and other methods, although now being considered, have not been tried. One body of medical opinion thinks that notification together with compulsory treatment of one or both sexes is well worth a trial, but it is recognized that the administration of such a system presents formidable legal difficulties, and the adoption of compulsion in regard to treatment would constitute a great departure from our national tradition.. Nevertheless, other countries such as Sweden possess compulsory powers and it is not inconceivable that Great Britain, under the stress of war, may be driven to take some action in the same direction. Certainly the present situation is not a very satisfactory one for the health officer.

On a few occasions I have received, through the English Ministry of Health, letters from American cities complaining that one of their nationals has returned home after infection from a named woman in Liverpool and asking that some action should be taken. From this I assumed that there are powers for compulsory treatment in some of your states and I know now that that is the case. But in Great Britain a medical officer of health is quite powerless to take compulsory action of any kind and he is always in danger of an action for libel or slander—concerning which the law in England is much more inconvenient than it is in your country where, I understand, freedom of speech really means what it says.

The minor disease, the spread of which is ascribable to movements of the population, is scabies. Prior to the war scabies was of slight consequence, very few cases being reported even among school children; but during the past two years the number of cases of this trivial and easily cured skin condition has increased to an enormous extent. The researches of Kenneth Mellanby show that scabies spreads from one person to another as a result of fairly close contact, and he is of opinion that the commonly accepted view of frequent infection through the medium of blankets is erroneous. In Liverpool we have opened about eighteen treatment centers for dealing with this condition and many thousands of cases are being dealt with. Nevertheless, scabies is now, in spite of our efforts, widespread throughout the community and it seems unlikely that it will be stamped out until after the war.

The other salient features of the epidemic situation since the outbreak of hostilities are the occurrence of a small number of outbreaks of paratyphoid B, not, it is thought, due to the war; and the second major disease a significant increase in the pulmonary tuberculosis notification rate in respect of age groups from 15–25 and 25–35 in the case of females, and 45–55, 35–45 and 25–35 in the case of males. In the opinion of those who have analyzed the figure of occupational mortality and morbidity, these increases in the incidence of pulmonary tuberculosis are due, not to food deprivation, but to overwork and overstrain directly occasioned by the war effort.

Regarding other major infectious diseases there is happily little to be said. Before the war there was no indigenous typhus, malaria, or smallpox in Great Britain so that, for outbreaks of these diseases to occur, importation of the infecting agent would have to take place. It is, of course, well known that typhus is now widely spread throughout Europe, not only in the East and South East where it has for years been endemic, but also in the West. Precautions have accordingly been taken at the British ports and a vigilant scrutiny of persons entering the country who have come from countries infected with typhus is being undertaken. On one or two occasions a case of smallpox has been admitted into the country and there has been one small outbreak of this disease, arising not from the original case but from a contact. There is so far no malaria imported from outside.

We are, therefore, fortunate in having escaped in three years of war any epidemics of the major infectious diseases and we are hoping, perhaps with some justification for our precautions have been carefully taken, to prevent the importation of typhus, malaria, and smallpox from the neighboring and unhappy continent of Europe. If we succeed in this effort it will be partly due to forethought and perhaps a little to luck, which no epidemiologist can afford to despise.

The direct danger of epidemics resulting from air raids was thought before the war to be likely only in connection with fractured water mains which might become heavily contaminated with sewage and thus cause an outbreak of typhoid. It may be said at once that this danger, although apprehended on apparently adequate grounds, has never materialized, and it has been reported by the Minister of Health recently that not one typhoid death in Great Britain during the period of heavy bombing has been due to pollution by water-borne infection. As far as Liverpool is concerned, it is certain that no case of typhoid occurred which could be traced to infection of the water supplies as a result of fractured mains. There are probably two factors which have led to this remarkable freedom from typhoid fever in spite of continuous bombing of crowded areas—a feature of our health record which has amazed American medical visitors to Great Britain. The first of these factors is the scarcity of typhoid fever in the urban areas in most years, although an epidemic of perhaps a few hundred cases may infrequently occur. In an average year the City of Liverpool, for example, will show a return of less than a dozen sporadic cases of typhoid and many years have elapsed since an epidemic of this disease last occurred. Most of the larger cities can tell a similar tale and, as a consequence, typhoid carriers are very scarce in the areas most subjected to bombing, and sewage which may have contaminated some of the water mains is unlikely to be infected. In the second place, arrangements are available in all large areas for heavily chlorinating the water in repaired mains before putting them into service again and, although this

system was not used universally during the heavy bombing raids, it was sufficiently employed to serve as a valuable safeguard. As far as London was concerned, the Metropolitan Water Board has, from the start, used mobile chlorinators with liquid chlorine for the larger mains (*i.e.*, more than 12 ins. in diameter), and bleach for the smaller mains; the amount of the chemical being calculated to give 10 parts per million in the repaired main. Because of the experience in Great Britain that the risks of outbreaks of typhoid are slight, immunization against this disease has not as a rule been regarded as necessary, but vaccines are available and would be used for mass inoculations if this was thought desirable.

I have been discussing conditions affecting generally the state of the public health in Great Britain during the three years commencing September, 1939, when war with Germany was declared. I propose now to consider in rather more detail the purely civil defense side of my subject with a view to discussing what effects the elaborate arrangements made to safeguard our population against the dangers of air raids had in protecting life and limb, health and morale during the period from August, 1940, *i.e.*, when raiding began, to May, 1941, when, as if by a miracle, this form of attack suddenly ceased. It may be that for the sake of clarity it will be necessary to repeat occasional items of information given in the preceding pages and if this happens my excuse—with infinitely less cause—must be that of Lord Bryce, at one time our British Ambassador to your country, who in his monumental work on the American Commonwealth expressed the opinion that if an author is obliged to choose between repetition and obscurity there should be no doubt as to the nature of his choice.

In order to be in a position to consider the subject from a practical point of view, let us discuss in detail what actually happens during a severe air raid on a British city. Suppose that the raid is of such dimensions that it entails a casualty list of 1,000 killed and 2,000 severely or slightly injured. A raid of this kind may be regarded as severe relative to the scale of raiding between August, 1940, and May, 1941, although not comparable to what has already happened on many occasions to German towns during the present year.

On the air raid alarm being sounded, all staff on stand-by duty either at their homes or at depots report and make ready for eventualities. Less than half-an-hour after the alarm all control centers and ambulances, first aid party and rescue party depots should be fully manned. The chief officers of the main services, *e.g.*, casualty services, rescue services, fire and water services, police, etc., with the control officers, are on duty at the city's main report and control center, while the divisional report and control centers and depots, on which the first impact of the raid will fall, are making the final preparations for immediate action.

Then sometimes there is a wait of several minutes before the first report of an "incident" will be received at a divisional control center from a warden by telephone. The air raid has begun. I have used the term "incident" and this requires explanation. An incident—surely a masterpiece of understatement—is any occurrence during an air raid which leads or may lead to injury to persons or damage to property, such as the explosion of a heavy bomb on a block of buildings, the fall of an incendiary bomb on a house, the dropping of a time bomb in a field near some buildings, destruction by blast of windows or doors, and even the fall of an unexploded anti-aircraft shell or shell splinters, if injury or damage is occasioned.

All these events—large or small—are

incidents and are reported to divisional control by the wardens as soon as possible. Wardens have a special report form and have been trained to report by telephone according to the headings on the form. Thus an attempt is made to give a complete picture of the incident—the approximate number of casualties, an idea of the damage resulting, whether a road has been blocked, or water or gas mains opened up, electric cables, telephone or tramway wires broken, etc. This telephoned report is entered on a form at divisional headquarters and it forms the basis for any immediate action taken, further reports on the same incident being telephoned from time to time as events develop. A usual event requiring a supplementary report is the occurrence of a fire which may break out or be discovered after the preliminary report has been dispatched.

In actual experience, under the hazardous conditions obtaining at the scene of an incident, wardens' reports are by no means accurate and this inevitably leads to unsuitable action being taken at the divisional report and control center which may send too many or too few services, or may perhaps fail to send a service which is urgently required. As a remedy for this difficulty the practice has grown up of sending to the location of the incident an "immediate action party" consisting of one ambulance, a car containing a first aid party of two persons, and a small rescue party with its own vehicle. This party is under the charge of an experienced man whose duty it is to assess the dimensions of the incident and report to the divisional control center what further services are required; the parties meanwhile dealing with the most urgent casualties.

If the incident is a large one with much damage and many casualties, such as occur when a large building is destroyed or a public air raid shelter or hospital severely damaged, it is customary to establish an "incident post" in a convenient situation near to the scene of the disaster and to place the local control in the hands of an incident officer who is usually a police inspector and to whom the leaders of all services report for general directions. The main duties of the incident officer are to coördinate the various services, to report from time to time to divisional control as to the progress made in dealing with casualties and damage, to give directions for the regulation of traffic at or near to the site of the incident, and to return to their depots as soon as possible redundant services. This last named duty is important, as there is a marked tendency on the part of the divisional control centers and also the main control centers to send to the scene of a serious incident of the kind I am discussing more ambulances, first aid parties, and rescue parties than can usefully be employed at any given time on the site of the disaster. Such action on the part of various chief officers at main headquarters in the face of a disaster to a hospital or a large public air raid shelter is only natural, as reports are often imperfect or misleading and tend to exaggerate the magnitude of the occurrence, but the temptation to play for safety and send an unduly large proportion of ambulances and parties to a major incident should be sternly resisted during a severe air raid, as these services may be urgently required elsewhere.

If I may be permitted a personal confession—I remember at least three occasions when I was guilty of this error of judgment during the raids over Liverpool between August, 1940, and May, 1941. These occasions were in connection with the demolition of a hospital, the firing of a train loaded with ammunition and the destruction of a large public shelter. Each of these incidents caused much loss of life and, in the case of the train, widespread de-

struction; but to me, the saddest occurrence of all during more than 100 air raids was the demolition of a large municipal hospital and the loss of much esteemed medical and nursing staff, including two medical students. On that occasion we sent during the night many ambulances and first aid and rescue parties, some of which were quite properly returned to the depots by the incident officers. The hospital staff rightly took the ambulances and parties as a matter of course; but what was highly appreciated was the dispatch of a mobile canteen on a Chevrolet chassis, one of several presented to the city through the generosity of certain voluntary societies in the United States. Indeed, according to the testimony of several junior members of the nursing staff of the hospital, this mobile canteen saved more lives than the ambulances.

Action at the scene of an incident is not, of course, confined to the night of the actual air raid. Many persons, trapped in debris, but protected in basements or under arches formed by beams and girders, are rescued the following day and a few are found alive two or three days after the raid. A proportion of them die from shock or exposure shortly after extrication from the debris.

Many bodies are recovered days or weeks after the raid and add to the figures of casualties, which cannot, therefore, be accurately compiled until a considerable time has elapsed after the night of the raid. Day after day the rescue parties tunnel under the debris, often in highly dangerous circumstances, until all persons known to be in the building have been accounted for. The compilation of the list of persons buried under the debris is usually the duty of the incident officers, and it is not the least responsible of his duties, since omissions from it may lead to losses in lives through the premature abandonment of the search in the debris, while the inclusion of the names of persons who were away or safe in shelters wastes the time of the hard pressed rescue parties. It has been a rule in Liverpool that the search in the debris of a demolished building shall not be given up until the incident officer is satisfied that all persons who might be alive have been rescued.

If the raid is a large one, as we are assuming, incidents small and great are occurring in many parts of the area and in adjacent areas, because enemy bombs are no respecters of local government boundaries; and ambulance and first aid and rescue staffs are busily engaged throughout the night in their dangerous but humanitarian occupations. The fire services—taken out by the Central Government from the local authorities months ago—are certain to be heavily engaged, since many and extensive fires are the invariable accompaniment to any air raid. Damage from fires is, in the aggregate, greater than direct damage from bomb explosions and it can only be minimized by highly efficient fire services, the system including elaborate arrangements for fire-watching, in which a large part of the adult population, male and female, is compulsorily engaged. Fires tend to create panic, do extensive damage not of course confined to the original site, and cause not a few casualties. The British experience in 1940 and 1941 was that in large raids the fire services were insufficient in many areas so that some fires had to be neglected until too late, owing either to the lack of personnel and equipment or to the absence of adequate water supplies. We have now a well equipped National Fire Service, elaborate fire-watching arrangements, and emergency supplies of water stored in metal, brick, or concrete tanks in all vulnerable areas.

The Medical Officer of Health's services are not, however, concerned with fires, but only with casualties arising from any cause, and his main duty is to convey injured persons away from the

scene of the incident as expeditiously as possible to hospitals and first aid posts. In Liverpool it is an instruction to first aid party leaders that a minimum of first aid should be given and that it is in the patient's interest that he should receive skilled medical and nursing attention at the earliest possible moment. Elaborate first aid procedures are therefore avoided, little splinting is done, sandbags along the side of an injured limb being often all that is necessary; but tourniquets are, of course, used to check serious arterial hemorrhage.

The amount of first aid required will depend upon the distance the patient has to be carried to hospital. In Liverpool and other large cities distances are short and accordingly little first aid is given; in rural areas, with long distances to the nearest hospital, more first aid would be necessary.

In Great Britain there has been an extensive call-up of doctors for the services and it is seldom that medical practitioners can be spared to deal with casualties except at large incidents. However, we have a small number of mobile surgical units equipped with instruments, drugs, and dressings and when called out these are accompanied by a doctor and two or more nurses. As far as possible mobile units are only sent to incidents where there are many serious casualties and the doctor and nurses, assisted by first aid men, may then undertake some rough surgery, give injections of morphia, and check serious hemorrhage. There have been occasions when the doctor sent out with a mobile unit has amputated a badly injured limb of a person trapped in wreckage, but the conditions calling for such heroic surgery are fortunately seldom present and the results, as might be expected, are generally unhappy.

One extremely useful function performed by the medical man in charge of a mobile unit is the giving of morphia to injured persons suffering from serious pain. The proportion of such cases is not, surprisingly enough, very large, and shock and hemorrhage remain our greatest problems.

So far I have been discussing action at the site of a bomb explosion or other air raid incident, and I propose now to shift the scene to the city's Central Air Raid Precautions Headquarters, usually referred to as the Main Report and Control Center. Here during an air raid are stationed the heads of the various services, such as the Chief Constable, the City Engineer, and the Medical Officer of Health. Each of these officers is assisted by a small staff and he is represented at all the divisional report and control centers. During the air raid, "situation reports" in connection with every incident are transmitted by the divisional operations centers to main headquarters and thus a fairly clear picture of the course the raid is taking throughout the city is presented. It may become evident that one or two parts of the area are bearing the main brunt of the attack and this will lead the heads of services to reinforce from other divisions the division or divisions subjected to heavy attack. From time to time requests will be received from adjacent local authority areas for the loan of ambulances or parties, and as far as possible applications of this kind are met at once by large cities with abundant services under arrangements for mutual aid which have been made under the general directions of the regional commissioner. Groups of local authorities have been formed in all areas and mutual support is controlled by a special officer—the Group Officer for Mutual Support—through whom applications for reinforcements within the group or from one group to another are received. If reinforcements are required to proceed from one region to another arrangements are made through the regional commissioners. In Liverpool, however, this was seldom required

in connection with the ambulance, first aid, and rescue party services, but the need for reinforcement from group to group and region to region was often experienced in the case of the fire services and was one of the main reasons for the nationalization of this branch of the organization.

As far as the casualty services were concerned, the Medical Officer of Health or his deputies at Main Control during an air raid deal direct with first aid posts and hospitals—not through the divisional organization as they do in the case of ambulances and first aid parties. Early in the raid hospitals and first aid posts taking cases from the parts of the city which appear to be the main objects of attack are warned by telephone that they must shortly expect a large influx of casualties. We receive a daily return of the number of beds available for casualties at the various hospitals in the city and are therefore in a position to estimate, during the raid, the moment when particular hospitals are becoming overloaded and the ambulance depots should be instructed to switch casualties over to other hospitals. Sometimes a hospital or first aid post is damaged and can take no further casualties. One way in which a hospital may be put out of action without extensive damage occurring is when main water pipes or sewers are broken or when a time bomb falls near the main entrance; but fortunately, pipes and sewers can be replaced within forty-eight hours and time bombs rapidly rendered harmless. There have been occasions when, in the middle of the night, hospitals have had to be partly or completely evacuated because of the fall of a delayed action bomb near to some of the wards. The removal of seriously ill or injured patients in large numbers from one hospital to another during an air raid at night is a responsible undertaking, and to facilitate such removals we have converted a large number of single-decker buses into ambulances, each capable of taking ten stretchers.

During an air raid of the kind we are considering, the emergency mortuary facilities will be fully employed. In Great Britain the standard of mortuary accommodation for target areas, as laid down by the Ministry of Health, is 3 places per 1,000 of the population. Mortuaries have been organized in some of the older schools and each possesses office facilities, viewing rooms, and a large space with racks for the accommodation of the dead. There is a Chief Mortuary Officer for the city and each mortuary has a superintendent, a clerical staff, and attendants. Needless to say, this kind of work is highly unpopular and it has been found difficult to recruit the necessary staff even if high wages are paid. I have been helped in connection with the staffing of this service by the clerical staff of the Corporation's departments, porters from hospitals, and medical students from the University who, naturally enough, have less objection to handling dead bodies than the average citizen.

During the raid and on the days following it the atmosphere at the emergency mortuaries is one of grim and unrelieved tragedy. Apart from the actual handling of bodies the greatest difficulty in connection with the mortuary service is that of identification. Some bodies are so injured that they cannot be identified with certainty, except by such indirect methods as the recognition by relatives of clothing or possessions. In some cases, of course, even that is not possible. In order to avoid the necessity of relatives viewing many bodies, the practice is followed of placing all articles found in the pockets of the deceased into a container marked with the same serial number as the body and, as a further help toward identification, strips of the outer clothing are taken and placed in the container. If there are letters, a national registra-

tion card, or an identity disc on the body at the time of death, and these are still available, the recognition of the deceased by relatives is rendered easy; but in many cases bodies cannot be identified at all and are buried in a common grave at a mass burial service. Questions in regard to presumption of death sometimes arise in relation to the disposal of property or to re-marriage and therefore from the legal point of view the mortuary records are of great importance. These records in Liverpool consist of a mortuary register, containing information in regard to serial number, date of reception of body, name of person (if known or ascertainable), age (if obtainable), sex, home address, cause of death (*i.e.*, falling masonry, bomb explosion, etc.), incident from which body was recovered, reference number of notification to friends or relatives, type of funeral arranged, date of burial, cemetery, section and grave number in which interment took place and signature of undertaker removing the body; property register containing an inventory of clothing and effects taken from the body; and various forms, including burial certificates, and in relation to funerals. Identified bodies can be claimed by relatives and buried privately—a grant being made by the Government toward the expense of burial in certain cases. In a proportion of cases relatives prefer the method of mass burial, and identified and unidentified bodies, each in a wooden coffin, are interred in vaults at our main cemetery, all religious denominations taking part in the communal ceremony.

The next line of action during an air raid is to transport persons rendered permanently or temporarily homeless by demolition of or damage to their houses to rest centers which have been established in convenient situations in all areas liable to bombing. Rest centers—a strictly temporary provision—are in Liverpool and other areas under the administration of the Public Assistance Officer and have been established in schools, church halls, dance halls, large houses, etc. They are provided with elementary cooking facilities, mattresses, blankets, chairs and tables, cutlery and crockery, and sanitary arrangements sufficient for temporary use by large numbers of persons have to be improvised. Relays of food are provided as the frightened straggling parties arrive throughout the night, a nurse is on duty all night and a doctor visits the center, and an officer of the Public Assistance Department takes the names and addresses of families ready for the billeting officer when he visits the center after daybreak.

In the morning officers of the local authority—who have probably had no sleep themselves—appear to arrange billets or to provide money for immediate necessities. Billets are in private houses as a general rule, compulsory powers to billet being available; but local authorities have in some cases provided large furnished houses where difficult families can obtain shelter. As a result of experience, these arrangements became so efficient that rest centers were completely cleared in about 48 hours unless, as often happened, another air raid had occurred on the following night. The duration of stay in billets depended upon the amount of damage done to the various houses. Where the blast had not affected the main fabric of the house but had only damaged doors, windows, or roofs, first aid repairs might be completed in two or three weeks, and the family would then return to commence the unenviable task of cleaning the house and putting such furniture as had survived into usable condition.

Some families in Liverpool have been "bombed out" of the same house or successive houses three times or more and are becoming quite used to their stays in rest centers, billets or, as fre-

quently happens, in the houses of friends. Naturally the number of houses completely destroyed or so badly damaged as to be regarded as incapable of first aid repairs is much less than the number affected to a minor extent by blast; and families escaping from the disaster of a demolished or seriously damaged dwelling (usually because they were in a shelter) are difficult to provide for. Like other and more fortunate families, they are taken for the night to a rest center and later provided with billets which they may be required to occupy for months until one of the limited number of unoccupied houses in the city, of a size suited to their means, is available.

During the severe air raids last year the need for small working-class houses was so great that housing standards were relaxed and some dwellings condemned as unfit for habitation by the medical officer of health before the war and awaiting demolition were temporarily brought into service to accommodate the homeless. This action was, admittedly, not justifiable on public health grounds and is one out of many examples of reductions in the standards of hygiene rendered necessary by the categorical imperatives of war. The arrangements for the provision of food and shelter for persons bombed out of their homes should be carefully thought out beforehand in great detail, because upon their satisfactory working during air raids depends, to no small extent, the morale of the people, who will form their judgments of the efficiency of all the local authority's civil defense services largely upon their personal experiences in connection with rest centers and billets.

One of the most important provisions of a complete civil defense scheme for an urban area is a system of air raid shelters properly distributed according to population density in the various districts of the city, each shelter being fitted with such requirements as heating, lighting, and ventilation so as to be reasonably comfortable during periods of prolonged occupation. Shelter policy in Great Britain, both during and prior to the war, has been the subject of prolonged and at times even acrimonious discussion between those who believed that a relative degree of safety could be secured by substantially built surface shelters and an important group who maintained that a much higher degree of safety was essential and that this standard could only be secured by deep underground shelters. Official opinion has remained strongly in favor of the former policy and, therefore, as far as ordinary domestic communal shelters are concerned, they are (unless local circumstances dictate another method, *e.g.*, tunnelling) surface shelters constructed of brick or concrete and of standard dimensions. There are many types, but the three main kinds of shelters are (1) public shelters, usually situated in strengthened basements under large buildings, intended originally for chance uses in daytime raids, but actually used during the first two years for night occupation; (2) domestic communal shelters, built in rows along one-half of the carriageway of side streets, and situated more or less opposite the houses occupied by the families for which they provide shelter; and (3) shelters of a special type, *e.g.*, the Morrison table shelter designed for use inside the house, the Anderson shelter for use in small gardens or yards and small brick or concrete one-family shelters. The public health department is mainly concerned with public shelters, but there are one or two observations to be made about the other types. Domestic communal shelters—by far the most numerous kind—are situated directly on the road and are commonly built of brick, the walls being 20 inches thick, the walls, roof, and floor being reinforced with steel bars.

They shelter 50 persons and are divided into three compartments, each with an entrance and a door which can be locked. Lighting and an electric heater which also acts as a ventilator are installed, but there are no sanitary conveniences, and water is not supplied as the shelters are close to the houses of the occupants. Some domestic communal shelters are fitted with metal bunks in two tiers but these are not popular except for use by small children and, of course, these fittings reduce the total capacity of the shelters. Difficulties are experienced in some parts of the city in persuading occupiers to keep the shelters allocated to them clean, and it has been necessary to appoint inspectors to deal with cleanliness in public and domestic communal shelters. However, it has been possible recently—in Liverpool—to reduce the number of these inspectors, as the standard of cleanliness has improved, and the provision of doors and locks and the allocation of a specified part of a shelter to each family have materially contributed to the care with which shelters are used—and also to the reduction of wilful damage. Infestation by lice and bed bugs of bedding (which is left in both public and domestic communal shelters during repeated air raids) has always proved a difficulty, and fumigation is required from time to time. Judging from experience of the use of domestic communal shelters of the standard design during a period of nine months of air raids, the verdict may justifiably be passed that they have provided a high degree of protection against blast and splinters (although not, of course, against a direct hit) and a reasonable standard of comfort for the occupants condemned to spend the greater part of a long night in them. They are cheaply built and, being situated near to the occupants' homes, can be quickly reached in a sudden raid and equally quickly vacated as occasion may require.

Public shelters afford protection to between 200 and 2,000 people. They are supplied with washing facilities and sanitary arrangements and light refreshments such as tea, coffee, cakes, and sandwiches are available at low prices. The daily cleaning of public shelters, after a night's occupation, is done by one of the departments of the local authority and, during air raids, shelter wardens are on duty to keep order and occasionally to settle disputes. Difficulties have been caused by a certain amount of drunkenness, and sometimes women of an undesirable character resort to the public shelters. In general, however, the standard of behavior has been good, and the regular occupants, of which there is a surprisingly large number, keep their bedding and belongings at the shelters for weeks or months at a time during air-raiding periods.

I have frequently asked occupants of public shelters why they are there, perhaps far from their homes, rather than in their local domestic communal shelters, and the impression one gets from questioning is that certain types of people, during dangerous periods, obtain a greater feeling of safety when surrounded by numbers of their fellows. There is also more going on at a public shelter as concerts or lectures are sometimes arranged, and the presence of a trained nurse and the visits of the doctor are matters of interest to many of the unsophisticated shelterers. The idea that public shelters are safer than domestic communal shelters is not a matter of fact but of feeling; and public shelters, packed with hundreds of people, are a source of continual anxiety to the administrative officers during air raids, since a direct hit by a large bomb, bringing down much of the building, may cause an enormous casualty list, whereas a bomb of similar size hitting a domestic communal shelter will have a much less damaging effect

because the number of persons is so much smaller. Dispersal is the fundamental principle for safety in air raids, and the occupation of very large public shelters, even if sub-divided into compartments, offends against this principle.

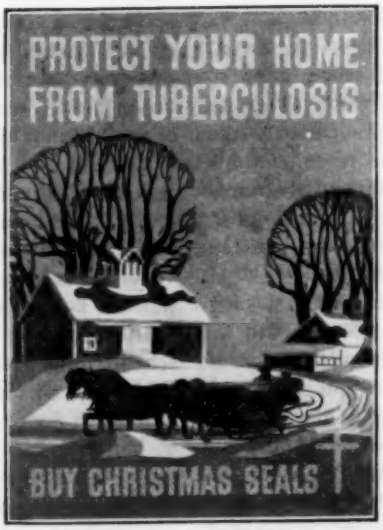
Medical arrangements in connection with public air raid shelters consist of a medical room with a sick-bay adjoining, mainly for isolation purposes, the attendance of a trained nurse throughout the night, and a visit of a medical practitioner to whom children suspected to be suffering from infectious diseases are referred for diagnosis and who, in addition, deals with various minor ailments which seem urgently to need treatment. It is no part of the doctor's duty to treat patients who could well be left to be seen by their own practitioners the next day. The principal reason for his visit and for the attendance of the nurse during the night is psychological, namely, to impart confidence to the occupants of the shelter.

The subject of special shelters, such as the Morrison and Anderson, can be briefly referred to. Both of these types are made of steel and are only supplied to local authorities in limited quantities at the present time, although in the case of the Anderson many were manufactured and distributed from 1938 onward before domestic communal shelters had been built in any numbers. The Anderson is an outside shelter and consists of thin corrugated iron, shaped in the form of a half cylinder, which is sunk in the ground to the depth of a few inches and its sides covered all over with sandbags or a foot of earth. Inside many of them have concrete seating and a concrete floor. On the other hand, the Morrison is an indoor shelter, six feet 6 inches long, and in appearance is like a steel table (and can be used as a table) with metal legs and strong wire mesh sides. Its provision is now restricted to persons who are badly crippled or permanently bed-ridden, a medical certificate, which is strictly scrutinized, being required when applications are received by local authorities.

My last subject is that of day and residential nurseries which are being provided as rapidly as possible for the children of mothers who are engaged in the war factories or on other work of national importance. In many cases the children are looked after by a relative or a neighbor, but it seems obviously desirable on health grounds that as many children as possible under the age for compulsory attendance at school should be cared for, when their mothers are working, by the local authorities in circumstances which insure a satisfactory diet, medical and nursing supervision, and some preliminary education of an informal kind.

For the present at least these nurseries, of which about 800 have already been opened in England and Wales, must be regarded strictly as a war provision; but it is likely that after the war the system will be retained and expanded, mainly in the form of nursery schools and classes, *i.e.*, as part of the Education Service rather than the Public Health Service. Today nurseries are of three main types, namely, those caring for children between the ages of 0–2, 2–5, and residential nurseries. The requirements of mothers working in the war factories vary according to the periods of duty. If a woman is on the three shift system, or for any reason has to work at night, the ordinary nursery caring for children during the day only is of little use to her and she is compelled to have recourse to a residential nursery, of which not many have been established. In general, mothers with children under the age of 5 tend to apply for work in shops or in small factories where a night shift system is not in operation, and for them the day nurseries, open from about 7:30 A.M. to about 6:30 P.M. are an adequate provision. Nurseries established in

elementary school premises and catering to children between the ages of 2 and 5 are usually in charge of the head mistress who is assisted by girls who have had a short course of training; while nurseries, either in school premises or in adapted houses, which care for children from 0 to 5 are under the control of a matron who is a trained nurse, and she is assisted by a teaching staff.



Food and Nutrition of the Industrial Worker in Wartime*

FRANK G. BOUDREAU, M.D., AND
ROBERT S. GOODHART, M.D.

Executive Director, Milbank Memorial Fund, New York, N. Y., and Chairman, Food and Nutrition Board, National Research Council; and Technical Adviser, Industrial Nutrition, Office of Defense Health and Welfare Services, Washington, D. C.

THE importance of the nutrition of the industrial worker began to be appreciated in this country soon after the outbreak of war in 1939. The character of the war impressed upon us the fact that, perhaps for the first time in history, the responsibility for national defense was shared by every class in the community. Wars could no longer be left to the armed forces and to ordnance plants. Successful defense called for the use of every worker and of every resource in the community. Germany was successful in the first years of the war because she had geared the strength and resources of the entire community into the war effort. It was a war of production; of production needed to keep the community strong, as well as to furnish weapons for the armed forces. The lesson was quickly learned in Great Britain where programs of public health and nutrition were greatly expanded at the very time that the military situation was the most desperate. We have not yet learned this important lesson. Workers upon whose production depends the outcome of battles in distant seas, islands, and continents are still inadequately fed. In many cases no amount of education in diets would be of very much help, for conditions are such as to make it almost impossible for the worker to obtain a good diet.

It was Great Britain's example which aroused our interest in the subject. There the Ministry of Food decreed that there should be a canteen in every plant employing 250 or more workers. The basis for this action was to be found in a statement of Sir John Boyd Orr:

> The improvement of the diet of workmen whose diet was not previously up to the standard for health is followed by increased output without any conscious increased effort and also by a reduction in the number of accidents. Many factories are now providing a meal for employees. It is likely that, as part of the national effort for increased output of war material, the provision of a meal will be made compulsory in all factories and measures be taken to ensure that the meal is on the lines of the Oslo breakfast, which will make good the deficiencies of the portion of the diet eaten at home.[1]

The National Nutrition Conference for Defense, called by the President and held in Washington in May, 1941, adopted a series of recommendations on the diet and nutrition of the defense worker.[2] Perhaps its most important recommendation was that the approval

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of all contracts calling for the construction or expansion of defense plants should include consideration of appropriate facilities for feeding the workers. This was awkwardly worded but the intent was clear. Unfortunately it was never implemented. It is still possible to build a plant in an area where practically no community facilities exist and to make no proper arrangements for feeding the workers. The Conference also recommended that the families of low-income workers (in defense industries) should be included in the distribution of protective surplus foods; it emphasized the importance of conditioning labor recruits nutritionally; and it pointed to the need for controlled studies of diet and nutrition in their relationship to health, working capacity, incidence of accidents, and absenteeism.

The Committee on Nutrition in Industry of the National Research Council took up the challenge of the Conference. In the summer of 1941 Dr. Robert S. Goodhart, vice-chairman of the committee, visited and studied thirty-three defense industries throughout the country. His report made it clear that facilities for feeding the workers were inadequate or lacking in most of the plants; that it was difficult or impossible for the workers to obtain good diets by their own efforts; and that, even when proper foods were available, it was easier and cheaper to purchase meals of nutritionally inferior foods. A controlled study of the diets and nutritional status of approximately 1,500 workers in an airplane plant in the West was organized under the auspices of the committee, and plans were made to start similar studies in several different geographical areas. The committee published its first report *The Food and Nutrition of Industrial Workers in Wartime* in April, 1942,[3] and copies were widely distributed, arousing keen interest among doctors, workers, and employers. Finally, in view of the interest aroused and the fact that ways to attack the problem were becoming known, the Nutrition Division of the Office of Defense Health and Welfare Services decided to employ a technical consultant in the nutrition of industrial workers and to set up an organization to carry out the work throughout the country. The technical consultant in the Office in Washington is to work through representatives in each of the twelve federal security regions. At least one of these is a physician with some experience with industry and special knowledge of nutrition. Had it not been for the army's need for doctors, many more qualified physicians would have been employed.

In the meantime industry itself had taken a prominent part in the work. Requests for advice poured in from industrial management and medical departments. Several industries undertook carefully worked out programs of education in nutrition, both for the worker and the worker's family. These programs were "sold" to other industries and must have had considerable results. Industrial leaders in Bridgeport, Conn., joined with civic and defense authorities to demonstrate what could be done to improve the diets of industrial workers. The leaven has spread throughout the country, so that at present few industrial leaders can be unaware of the importance of proper food and nutrition for the worker.

When the Committee on Nutrition in Industry started its work, practically no information was available concerning the diets of industrial workers, little or nothing was known of their nutritional status, and no one had gone to the trouble of collecting information concerning the facilities for feeding workers available in war plants. The committee was forced to rely upon indirect evidence, and the advice of experts with practical experience. The committee's reasoning is found in its first published report. It was known that many war

plants were expanding rapidly and that many new plants were being built, some in sparsely settled areas with inadequate facilities for housing, food, and medical care. New workers were being employed and these came in large part from age groups and classes not suitable for the armed forces. Many of them had been unemployed, and the change from light or no work to fairly long hours of concentrated toil, with changing shifts and unaccustomed types of work, must have imposed a heavy strain upon bodies and minds which in so many cases were out of training.

The only available evidence concerning these new workers was derived from an investigation of the nutritional status of a WPA group in New York City. This group was engaged in clerical, messenger, and laboratory work, and had not been very effective, although on the whole competent and willing. Over 26 per cent of 165 adults of both sexes were found to be deficient in blood-plasma ascorbic acid with less than 0.20 mg. per cent. More than 40 per cent had less than 0.40, and over 55 per cent had less than 0.60 mg. per cent. As for the incidence of anemias, 7.6 per cent of the males had less than 14 gm. of hemoglobin per 100 ml. of blood, and 6.8 per cent of the females had less than 12 gm., the minimum limits of the normal range for males and females respectively.

The most common of the deficiencies was avitaminosis A, revealed by characteristic changes in the conjunctiva. Marked changes were found in the eyes in 65 of 143 persons examined, while only one of the entire group was classified as completely normal. In a number of the cases these changes in the conjunctiva have disappeared after long treatment with vitamin A, whereas they are still as marked as ever in a control group.

The committee viewed with some alarm the employment of such nutritionally deficient persons in war plants; they were not likely to get into the armed forces. Hence it recommended that steps should be taken to condition nutritionally those classes of the population who are likely to become workers in war plants. In adopting this recommendation the committee had in mind the startling results obtained in Great Britain when volunteers who had been rejected by the army, mainly for underweight, debility, and deficient chest measurement, were conditioned at the Physical Development Depot at Canterbury.[4] Nearly a thousand rejectees were built up for six months at this depot. Measures for improving the health of the unsuccessful recruits (this was in peacetime) included: 1, optimum diet; 2, long sound sleep; 3, hard physical work; 4, healthy recreation. Milk and fruit were added to the presumably adequate army ration. In addition to four regular meals, a snack was served at 10:30 a.m. (milk or soup and fruit), and the men had tea (tea, biscuits, and barley sugar) in the afternoon.

As a result of this conditioning, 87 per cent of 834 men so treated were accepted and passed into the army. Only 5 per cent were afterward discharged on grounds of medical defect.

This is certainly an economical and simple method of conserving badly needed man power. It could have been carried out easily in CCC camps as well as in NYA, WPA, and defense training schools. It is probable that these agencies have greatly contributed to the efficiency of the men, women, and boys with whom they have dealt. But it would have been well worth while to have made a more ambitious effort to condition, under medical and nutritional guidance, some of the weaker elements among those on whom we now depend for war production.

The committee also based its recommendations in part on the work of Williams, Wilder, and their coworkers,[5]

who showed that a diet sufficiently rich in thiamin to prevent the development of obvious deficiency disease is not necessarily adequate for the best nutritional state of the patient. Larger amounts of this vitamin in the diet increased the alertness and attentiveness of experimental subjects and led to more satisfactory performance on an exercising device; i.e., increased working capacity. Diets deficient in thiamin gave rise to clumsiness leading to numerous small accidents, such as finger cuts and broken dishes. Many authorities believe that thiamin is one of the commonest deficiencies in the American diet. Significant changes in the psychological state of the experimental subject have also been produced by decreasing or increasing the thiamin content of the diet.

The Committee on Nutrition in Industry has now in its possession many more facts concerning the diets and nutrition of industrial workers than were available to it in 1941. The vice-chairman of the committee brought back from his brief survey of thirty-three war plants a general picture of the facilities available for feeding workers in and around such plants, and some idea of what the men had for breakfast. In far too many cases the workers drove long distances to work with little or no breakfast. Sometimes they obtained breakfast at the plant cafeteria and more often than not selected dishes of little nutritional value. At luncheon some of the men ate in the cafeteria if one was available; their choice of dishes was poor in one-third to one-half of the cases. Workers who did not eat in the cafeteria had recourse to lunch boxes, which cause delays because they have to be inspected to prevent possible sabotage. But war plants with adequate cafeterias were almost unknown, and those which did exist did not help the workers to select a balanced meal. In fact, the worker who does select a good meal in the average plant cafeteria is penalized by having to pay more than the usual price. Thus if the special meal recommended by the cafeteria costs 30 cents, a balanced meal exceeds that cost by varying amounts.

More precise data on workers' diets were furnished by a study of the diets of about 1,100 aircraft workers in Southern California.[6] The report on this study has been elaborated in some detail and cannot be adequately summarized here. Over 55 per cent of the diets were classified as poor as regards consumption of green or yellow vegetables; nearly half were deficient as regards citrus fruit or tomatoes; about a third were poor in milk, a fifth in eggs, but almost all were satisfactory in the amount of lean meat consumed. Only 2 per cent of the diets contained satisfactory amounts of each of the five food groups, while 87 per cent of the diets had amounts definitely below those recommended by the Food and Nutrition Board of the National Research Council.

Two hundred and fifty complete two day diet records (the conclusions above refer to weekly diets) were analyzed to obtain approximate values for their nutritive content. The percentages of the diets in which the amounts of specific nutrients were less than two-thirds of the recommended daily allowances were: protein 0.8 per cent; iron 4.0 per cent; niacin 7.2 per cent; thiamin 14 per cent; vitamin A 14.8 per cent; calcium 24.8 per cent; riboflavin 43.2 per cent; ascorbic acid 46.0 per cent. There were 71.6 per cent of these diets which fell short of two-thirds of the daily allowance in one or more specific nutrients. It is surprising to find that 40 per cent of the men reported diets which furnished less than 140 per cent of basic metabolic needs, as this level of caloric intake is insufficient for men engaged in work involving physical activity.

The workers who reported these diets were medically examined to determine their nutritional status at the beginning

of the study. The results of these examinations have not yet undergone complete analysis, but Dr. Henry Borsook, director of the study, has reported some preliminary findings.[7] Forty-two per cent of slightly less than 1,000 workers had less than 0.5 mg. per cent blood plasma ascorbic acid (17 per cent had less than 0.25 mg. per cent). Nineteen per cent showed signs of premature degeneration of the nervous system as evidenced by loss of vibratory sensation in the toes to a C–256 tuning fork. This is generally accepted as pathological in men under 35 years of age. Forty-seven per cent had localized, elevated conjunctival spots (Bitot's spots); evidence of vitamin A deficiency. Over 28 per cent had a blood hemoglobin content of less than 14 gm. per cent. Capillary invasion of the cornea of the type indicative of riboflavin deficiency was almost universal. The final report of this study will be of the greatest interest, as about half of the men are being treated for their nutritional deficiencies.

It may be noted, in the foregoing, that the percentage of nutritional deficiencies exceeded the percentage of diets deficient in particular nutrient. This is probably accounted for by losses of nutrients in processing, storage, cooking, and standing. Recent evidence on this subject tends to show that these losses are probably very great in practice; as high as 90 per cent in ascorbic acid.

The evidence that has been uncovered in these studies, few and incomplete as they are, cannot be glossed over. Each new survey reinforces and strengthens the case. The war workers, on whom we depend for production of the tools of war, are not adequately fed. A large proportion of them suffer from multiple but mild nutritional deficiencies. Under these conditions optimum health is impossible, and output must suffer accordingly. According to Dr. C. O. Sappington, time lost on account of illness is costing American industry ten billion dollars a year. Dr. Victor G. Heiser states that ordinary disease such as prevails in the community is responsible for nearly fifteen times as much loss of time as trade hazards and accidents combined. No one knows how much of this absenteeism could be reduced by adequate diets, but every dietary experiment with workers, however incomplete, has shown beneficial results. Sound health cannot be maintained without an adequate diet, and health is the foundation of morale. Ivy[8] states that work demands rest, good food, and wholesome recreation; that physical fitness is essential to sustained effort and output. The rôle of adequate diets in the armed forces should lead us to give equal consideration to the nutrition of our war workers who play so large a part in our defense.

Those who have not been in close touch with this subject can have no idea of the widespread interest among workers and their families, management, communities, and states. This growing interest has extended to industrial physicians who had been taught in the past that the diet and nutrition of workers did not come within the scope of their work. The American Association of Industrial Physicians has set up an active Committee on Nutrition in Industry. The Committee on Industrial Health and Medicine of the National Research Council has held joint sessions with the Committee on Nutrition in Industry, and has adopted all of the latter's recommendations.

Interest among other groups is just as widespread. State Defense Councils have devoted considerable attention to the subject; in New York State two full-time physicians trained in public health have been employed for the purpose of directing this work. State and local committees have organized subcommittees on nutrition in industry, many large plants have employed nutritionists and dietitians, and public

utilities have thrown some of their large resources into the campaign.

This widespread interest in the health and nutrition of the industrial worker gives the alert health department a golden opportunity to make its influence more widely and deeply felt. It gives the health officer a chance to widen the scope of his program; the industrial physician the opportunity to make his work much more effective. No longer is nutrition regarded as something for women and children, for now soldiers, sailors, and airmen as well as war workers come into the picture. We determined after the last war that steps would be taken to fill the gaps in our public health program revealed by the draft examinations. That our efforts were not very effective is shown by the results of present selective service and induction examinations. We should take every advantage of the new knowledge and the new interest in the field of nutrition to move forward toward our goal, and to banish forever the assumption that dictatorships excel democracies in utilizing advances in science for the benefit of their people.

REFERENCES

1. Orr, Sir John Boyd. Trends in Nutrition. *Brit. M. J.*, Jan. 18, 1941, pp. 73–76.

2. *Proceedings of the National Nutrition Conference for Defense, May 26, 27, and 28, 1941.* U. S. *Gov. Ptg. Off.*, Washington, D. C., 1942, pp. 127–129.

3. The Food and Nutrition of Industrial Workers in Wartime. *First Report of the Committee on Nutrition in Industry.* National Research Council, Washington, D. C., 1942.

4. Crawford, J. A. The Work at the Recruits' Physical Development Depot, Canterbury. The Undersized Recruit. *J. Roy. Army M. Corps*, 73:1–39, 1939.

5. Williams, R. D., Mason, H. L., Wilder, R. M., and Smith, B. F. Observations on Induced Thiamine (Vitamin B_1) Deficiency in Man. *Arch. Int. Med.*, 66:785–799 (Oct.), 1940.

6. Wiehl, Dorothy G. Diets of a Group of Aircraft Workers in Southern California. Milbank Mem. Fund *Quart.*, XX, 4:329–366 (Oct.), 1942.

7. Preliminary Report presented at the Annual Conference of the Milbank Memorial Fund, May 7, 1942, unpublished.

8. Ivy, A. C. Physiology of Work. *J.A.M.A.*, 118:569–573 (Feb. 21), 1942.

Fuel Oil Rationing Protects Public Health*

JOEL DEAN

Director, Fuel Rationing Division, Office of Price Administration, Washington, D. C.

FUEL oil rationing is a positive program to protect public health against the potential ravages of the critical petroleum transportation shortage. Before the war 95 per cent of all petroleum consumed in the Eastern Area was supplied by tanker shipments. The toll of tankers by Axis submarines, plus diversion of tankers to war use, has reduced this form of transportation to a negligible quantity.

Because petroleum cannot be transported into the East by tankers in adequate quantities, every effort has been made to move petroleum by overland methods. All available tank cars, pipe lines, tank trucks, and barges on inland waterways have been put into service. However, in spite of tremendous increases in this form of petroleum shipment, thus far it has been impossible to supply the East with enough petroleum to fulfil minimum civilian and war production needs. As yet, the petroleum transportation shortage has not hurt the war effort. No war production plant has been forced to close down, nor has any airplane in the interceptor command been grounded for lack of gasoline. Your government hopes, by rationing and supply control, to prevent the fuel deficit from becoming so serious as to force choices among equally unpleasant options—shut down of war production plants, inadequate supplies for the armed forces, or homes so cold as to endanger health.

To cope with this desperate war production and military supply situation and at the same time adequately safeguard public health, it was necessary to develop a rationing program which would attain several objectives. First, it should provide an effective stimulus to conserve fuel oil by improving burner efficiency, reducing structural heat loss, or converting heating plants to coal in order to make a positive contribution to the reduction of the fuel oil deficit. Second, it should curtail consumption to bring it into consonance with the petroleum transportation shortage and accomplish this curtailment in a fashion to assure equitable distribution of the available supplies. Third, it should take account of the special heating requirements of the young, the aged, and the ill.

Unless fuel oil is rationed and these objectives are attained, public health will be seriously jeopardized. Distribution of the woefully inadequate supply of this vital fluid by happenstance favoritism with no consideration for the high essentiality of hospitals or homes sheltering the ill, the aged, and the very young would result not only in cruel suffering but in an intolerable general health problem.

A positive incentive must be provided consumers to increase the amount of

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heat and health they get from a gallon of fuel oil and thereby make an important contribution to the closing of the deficiency gap between a reduced supply and augmented requirements. This stimulus is provided by the rationing plan in the form of a differential cut depending upon thermal efficiency. Thus the wasteful user who has the greatest need and opportunity for improving thermal efficiency will be cut most, whereas the tight house that has few remaining opportunities to reduce fuel waste is curtailed least.

The effectiveness of this stimulus will be greatly increased if people are adequately advised as to how to improve their thermal efficiency. The public health officer and the medical profession are in a position to contribute importantly in passing on specific advice to consumers about ways of getting optimum health conditions from their fuel oil rations.

Insulation, storm windows and doors, and weather stripping will aid greatly in keeping heat where it will do the most good. An efficient burner properly adjusted, a carefully checked chimney, and a boiler or furnace, and heating pipes that are properly insulated will do much to get the most out of a limited ration by generating heat efficiently. In many cases this equipping and adjusting program will pay for itself in a very short time, not only in greater comfort and better health but in actual cash savings.

There are many other steps which the individual home owner can take to use his fuel ration most effectively. Unused rooms, such as extra bedrooms, and rooms that are notorious heat wasters, such as sun rooms, can be shut off completely. Radiators and registers should be shut off when windows are opened. Window shades can be lowered when light is not needed. Keeping draperies, or anything that interferes with circulation, away from radiators will greatly increase the efficiency of the heating plant. Fireplaces can be closed off when not in use and thus prevent the escape of heated air. At other times, in mild weather, the fireplace will often provide sufficient heat without using the central heating plant. Great fuel economy results from lowering the temperature for at least 8 hours during the night. Many of these improvements and adjustments cost little or nothing except care and thought.

Under the ration plan, all uses of fuel oil and kerosene—whether for home heating, industrial, commercial, military, or miscellaneous—will be regulated. Every purchase of fuel oil will require the presentation of coupons or equivalent evidences secured from local War Price and Rationing Boards. Only heating uses, however, will be restricted.

In determining the basic home fuel oil ration, the following factors are considered for a private dwelling: (1) a standard heat-loss formula, based on the square foot dwelling area to be heated; (2) the previous heating season's consumption, adjusted for normal weather; (3) the number of occupants in each house. The ration will be affected by the normal temperature of the area in which the establishment is located by the use of a degree day temperature table for each area. The United States Weather Bureau has supplied the degree day information for our use.

The heat loss formula considers the heating requirements of a typical free standing house, possessing standard insulation and burner efficiency under the normal degree day temperature of the area in which it is located. By using two constants, the formula will set a ration range, which makes it possible to classify homes according to thermal efficiency and vary the ration in a way to stimulate improvement in efficiency. If 66⅔ per cent of last year's adjusted consumption falls within the formula range, this amount of fuel oil will con-

stitute the ration. If the fuel oil allowance estimated on this percentage basis falls above the range, the maximum of the range will be taken as the ration. If it falls below, then 85 per cent of last year's adjusted consumption, or the minimum of the range, whichever is smaller, will constitute the ration. The formula for determining the ration will not presuppose the achievement of any particular temperature. The temperature inside the dwelling will depend upon the supply of fuel oil available and upon the individual consumer's preference for a higher or a lower temperature for a shorter or a longer period of time.

The individual ration, of course, will be determined by local War Price and Rationing Boards. The basic application blanks will contain the information necessary for the board to determine the ration. Consumers were urged to fill their tanks before the program started. The board will therefore assume that most private houses had full tanks on October 1, and will require additional evidence if the consumer states that his tank was not full. If this evidence is satisfactory, the ration will be tailored to the amount of the actual October 1 inventory.

The heating season has been divided into five periods of approximately equal degree days, and the rationed area has been divided into four thermal zones. Since the calendar distribution of degree days varies from thermal zone to thermal zone, the dates of the heating periods will be different for each thermal zone. Coupons are numbered to indicate the period in which they are valid. The value of the coupons can be changed from period to period to meet unusual weather conditions and unusual factors of supply.

Of particular interest to your group is the provision that has been made for supplemental or auxiliary rations. These may be granted by War Price and Rationing Boards upon demonstration that a special hardship would result from using the basic ration alone. Under the plan, special provision is made for persons of poor health, those of tender or advanced age who require warmer temperatures. In the case of children, if they are under 4 years of age, that factor alone will be considered justification for rations to heat the home slightly above the average. Where there is sickness or old age, the eligibility for supplemental rations will be determined by certification or prescription of a licensed physician.

This provision places a grave responsibility upon the medical profession. Whenever it is necessary to provide special rations to meet unusual situations there is danger of laxity growing out of misunderstanding of the seriousness of the trust. The laxity in discharging this responsibility will be perilous to public health. The medical profession in certifying to auxiliary rations must guard the health not only of the applicants but also of those who are not eligible for special consideration but whose ration will be reduced if the privilege is abused by others. Abuse of this privilege can undermine confidence not only in the rationing administration but also in the medical profession, and can thereby break down the effectiveness of the entire rationing program. We know that we can depend on your profession effectively to bring to the attention of those members who may tend to be lax and over-generous the fact that not only the rationing program but the nation's entire war effort would be endangered if serious abuses were permitted.

As an aid to you and to your neighbors on the rationing board in assuring affective administration of this provision, a local review committee composed of the public health officer and two members of the medical profession will be selected by the county medical association in most rationed communities.

I am confident that we will receive the active support of the public health and medical profession in this positive program to protect the public health in the face of the critical petroleum supply deficiency. We have sought and followed the advice of the medical profession throughout the development of the rationing program. We are still seeking your advice. If you feel, at any time, that the plan or its administration can be improved, feel free to tell us so. We want your counsel whenever possible, for we know that the interchange of ideas is necessary to successful waging of the war on the home front.

Etiology of Acute Illness Among Workers Using Low-grade Stained Cotton*

ROY SCHNEITER, PAUL A. NEAL, M.D., F.A.P.H.A., AND BARBARA H. CAMINITA

Associate Bacteriologist; Chief, Research Section; and Junior Bacteriologist, National Institute of Health, U. S. Public Health Service, Bethesda, Md.

THIS paper presents the results of a further investigation of the etiology of an acute illness among workers using low-grade stained cotton. This illness has been previously reported [1] as occurring among workers in rural mattress making centers, cotton mills, cotton seed processing plants, and upholstering plants, where a very low grade of dusty stained cotton of the 1940 crop was used. Since April, 1941, reports of outbreaks of this illness have been received from 25 states and 2 Canadian provinces, with more than 700 cases reported in one state alone. Illness occurred among workers exposed to high dust concentrations and the severity of the illness varied with the degree of exposure. This disease is characterized by its sudden onset, 1–6 hours after exposure, and the short duration of the acute phase, usually 24–48 hours after exposure. The principal subjective symptoms are conjunctival irritation, substernal oppression, dryness of throat, generalized aches, fatigue, headache, cough, chills, fever, anorexia, nausea, and vomiting.

INVESTIGATION INTO THE CAUSE OF OUTBREAKS

During the course of this investigation, 115 samples of cotton, cotton dust, linters, cotton plant debris, cotton seed and soil were received from 14 states, the U. S. Department of Agriculture, and 2 Canadian provinces. These samples are listed in Table 1.

All the samples of cotton incriminated in outbreaks of illness were dusty, low grade and stained, and contained varying amounts of plant debris. The majority of these samples were classified within official grades for tinged and stained cotton by graders of the U. S. Department of Agriculture, and many of them were described as "bolly [2] in character."

Preliminary chemical studies failed to reveal any extractable fractions, toxic gases, or insecticides present in the cotton which would be capable of causing illness.

MICROBIOLOGICAL STUDIES

The low incidence of fungi and the infrequent occurrence of pathogenic types of fungi in specimens of stained cotton precluded this class of microorganisms as the cause of the illness.[1]

A microscopic examination of fibers of the stained cotton in moist preparations demonstrated the presence of rod-shaped microörganisms in mucilaginous clumps along the sides of the individual fibers. Fibers of stained and of normal cotton were stained by Gram's method and mounted in balsam. The fibers of

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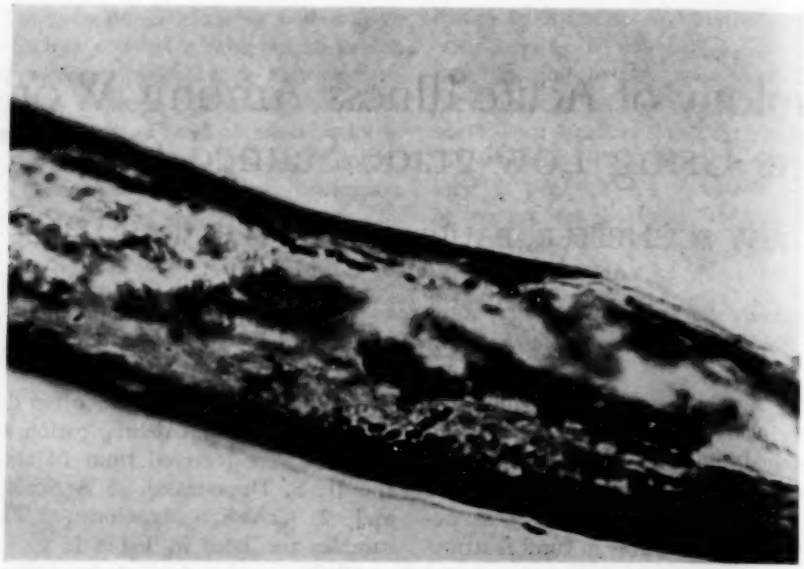

FIGURE 1—Microörganism in Lumen of Stained Cotton Fiber, Gram's Stain

stained cotton were seen to be thin-walled and to contain many short, rod-shaped bacteria within the lumen,[1] whereas the fibers of normal cotton were thick-walled and free of bacteria (Figure 1).

A quantitative bacteriological examination was made of all samples of cotton and other materials received for investigation. A 1:100 dilution of each sample was prepared by aseptically weighing 1 gram of material into 100 ml. of sterile physiological saline in wide-mouth, screw-cap bottles. The bottles were agitated mechanically for 20 minutes. Serial dilutions from 1:1,000 to 1:100,000,000 were made from the resulting suspensions. These dilutions were plated on potato-carrot-dextrose agar.* Inoculated plates were incubated 24 hours at 37° C. The plates from all samples of stained cotton showed a heavy growth of large, colorless to pale yellow mucoid, spreading colonies to the exclusion of significant numbers of other types of bacteria (Figure 2). Microscopic examination of isolated colonies showed that the predominating microörganism was a Gram-negative rod. The incidence of this type of microörganism in the various materials examined is shown in Table 1.

Mucoid microörganisms predominated in 73 of the 74 samples of stained cotton from lots known or suspected to have caused illness. The plate counts of mucoid bacteria in these 74 samples ranged from 4,000 to over 5,000,000,000 per gm. of cotton. The same strain of mucoid bacterium, determined biochemically, was isolated from 65 of these 74 samples. This strain or type culture will be referred to in this paper for convenience as the "cotton bacterium." The "cotton bacterium" was also isolated from 3 of 8 samples of

* Formula: Potatoes, 2,000 gm.; carrots, 500 gm.; dextrose, 200 gm.; magnesium sulfate, 3.0 gm.; calcium carbonate, 2.0 gm.; agar, 150 gm.; and water, 10 liters. pH adjusted to 6.8.

TABLE 1

Bacteriological Examination of Samples of Material Relative to Acute Illness

Type of Material Examined	*Total No. of Samples*	*No. of Samples Containing the Cotton Bacterium*	*Average Plate Count of Mucoid Bacteria per gram*
Reported or Suspected to Have Caused Illness:			
Tinged or stained cotton	74	65	678,000,000
Cotton mill dust	3	2 *	5,739,000,000
Bolly cotton seed as it reaches the seed oil plant	2	1 *	38,658,000
Bolly cotton as it reaches the gin	2	2	48,000,000
Obtained from Plants Where Mill Fever or Grain Fever Had Occurred:			
Cotton mill dust	4	3 *	36,125,000
Elevator screenings (grain dust)	4	4	18,150,000
Not Known to Have Caused Illness:			
Stained cotton, various grades obtained from miscellaneous sources	5	2	399,000,000
Stained cotton, various grades, obtained from U. S. Dept. Agriculture for comparison	5	5	159,221,000
Tinged cotton, various grades, obtained from U. S. Dept. Agriculture for comparison	5	2	1,021,000
Tinged or stained cotton, history unknown	3	1	51,700
White cotton, obtained from U. S. Dept. Agriculture for comparison †	9	0	118,000
Soil from ranch on which bolly cotton was grown	2	0	600,000
Cotton plant debris from field of plants infected with angular leaf spot	1	0	.....
Hemp dust collected around a tow shaker in a hemp mill	1	1	1,020,000
Hemp plants, root, stem, leaves and blossom of Kentucky and of Chilean hemp	2	0	5,000

* An aberrant strain of the mucoid "cotton bacterium" was isolated from the rest of the samples in this classification.

† Included in this group are the 2 samples of high grade cotton used as controls in the experimental work.

stained cotton reported not to have caused illness or on which the history was unknown.

The cotton bacterium was not recovered from the two control samples of high grade white cotton which were used throughout this investigation. The plate counts of miscellaneous microorganisms on these two samples were 13,000 and 110,000 per gm. respectively.

In order to determine the distribution of the cotton bacterium in different grades of cotton, 17 samples representing practically all grades of white, tinged, and yellow stained cotton were obtained from the U. S. Department of Agriculture. The presence of the cotton bacterium was demonstrated in all grades of yellow stained cotton and in two samples of the tinged cotton. The

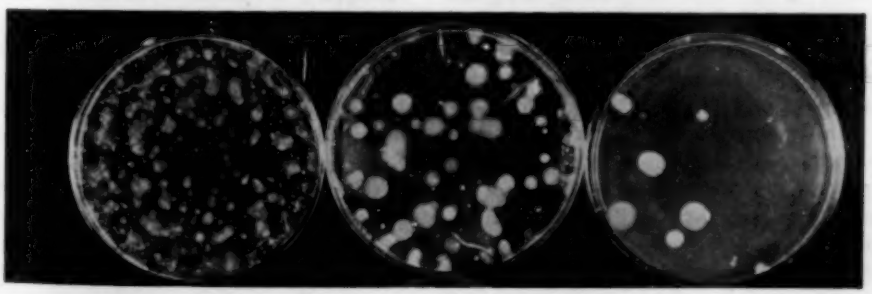

FIGURE 2—Incidence of Mucoid Bacterium in Dilutions of 1:1,000,000, 1:10,000,000 and 1:100,000,000 from a Sample of Stained Cotton

incidence of this microörganism ranged from 1,000 to 670,000,000 per gm. It was not demonstrated in any of the grades of white cotton or in four of the grades of tinged cotton examined. The results of these examinations indicate a possible wide distribution of the cotton bacterium in low-grade tinged and yellow-stained types of cotton.

A sample of cotton collected in 1938 from a cotton mill in which a severe outbreak of "mill fever"[3] had occurred contained this microörganism in excess of 3,000,000 per gm. 3 years after collection.

An intact bale of low-grade stained cotton was obtained from a rural mattress making center in which a severe outbreak of acute illness had occurred. The incidence of the cotton bacterium in this cotton at the time of receipt was 1,100,000,000 per gm. (average of 5 analyses). At the end of one year of storage, the numbers of viable mucoid microörganisms had decreased to 470,000,000 per gm. of cotton.

Two dust samples from a cotton mill and 1 sample from a cotton seed plant in which several cases of this acute illness had occurred revealed the incidence of the mucoid organisms to be 1,200,000,000, 16,000,000,000, and 18,000,000 per gm. respectively. Four samples of dust from cotton mills in which this unnamed illness had not been reported but in which cases of mill fever had previously occurred showed an incidence of mucoid organisms in excess of 1,000,000 per gm. The cotton bacterium was isolated from 3 of these samples.

In connection with a severe outbreak of this illness in one cotton seed processing plant, it was possible to obtain specimens of (a) the soil in which the cotton had grown, (b) intact bolls from cotton plants in the same field in which the incriminated cotton had grown, (c) cotton seed from the plant, (d) cotton lint, and (e) rafter dust from the linting room of the cotton seed plant. The typical cotton bacterium was isolated from the intact bolls and the cotton seed. An aberrant strain was isolated from the lint and rafter dust. The field soil did not contain this type of organism. The incidence of this general type of mucoid microorganism in these specimens was as follows: cotton from intact bolls, 3,800 to 54,000,000; cotton seed, 1,400,000 to 77,000,000; lint, 14,000,000; and rafter dust, 18,000,000 per gram of material.

This acute illness is similar to heckling fever, mill fever, hemp fever, and grain fever reported in workers inhaling flax, jute, hemp, or grain dust respectively. During these studies it was possible to obtain 4 samples of elevator dust screenings collected in a center where grain fever has occurred and a sample of hemp dust collected around a tow shaker machine in a hemp mill. The typical cotton bacterium was isolated from all of these samples.

Two hundred and fifty representative cultures of the predominating microorganism present in the material under investigation were isolated and purified for further study.

A microscopic examination of all cultures demonstrated that the predominating microörganism was a Gram-negative rod averaging 2 x 0.7 μ, heavily encapsulated and actively motile in hanging drop preparations.

All purified cultures were subjected to an extensive series of biochemical studies for purposes of identification and classification. The basic medium employed for the fermentation studies contained 3 gm. of meat extract, 10 gm. of Bacto-proteose peptone No. 3, 5 gm. of C.P. sodium chloride, 0.02 gm. of phenol red or brom thymol blue indicator, and 5 gm. of the fermentable substance per liter. Final pH was 7.4. This medium was used in Durham fermentation tubes.

All observations on fermentation and

TABLE 2

Morphology and Biochemical Reactions of "Cotton Bacterium"

Test or Test Substances	*Reaction*
Gram Stain	−
Capsule	+
Flagella	+
Motility	+
Xylose	Acid and gas
Arabinose	" " "
Dextrose	" " "
Levulose	" " "
Galactose	" " "
Mannose	" " "
Maltose	" " "
Lactose	" " " Slow fermentation at 20 and 37°.
Indole	Negative (−)
Methyl Red Test	" (−)
V.P. Test	+
Na. citrate	+
E.M.B. Agar	Atypical small pink colonies
Sucrose	Acid and gas
Trehalose	" " "
Raffinose	" " "
Figment	Cream color to bright yellow on nutrient agar. Produced best at 20° C.

Test or Test Substances	*Reaction*
Dextrin	Acid and gas
Inulin	Slight acid changing to alkaline. Slight gas
Starch	Acid and gas
Salicin	" " "
Glycerol	Acid
Adonitol	Slight acid changing to alkaline
Dulcitol	Acid and gas
Rhamnose	" " "
Mannitol	" " "
Sorbitol	" " "
Inositol	Slight acid to alk.
Cellobiose	Acid and gas
Litmus Milk	Acid, coagulation, and reduction
Russell's Dbl.	Butt—AG
Sugar Agar	Slant—No change or alk.
Lead Acetate	Very slight to negative H_2S production
Gelatin	Liquefaction positive in 4–7 days
Nitrate broth	Reduction to nitrites
Urea Medium	Alkaline, very little visible growth
Hemolysis	Negative

other tests requiring prolonged incubation were made after 24 hours and 7 days. Where reaction developed slowly a 21 day incubation period was used.

Cultures of the mucoid microörganism giving identical biochemical reactions were isolated from 70 of the 81 samples of stained cotton or other materials incriminated in outbreaks of this acute illness, as well as from 17 of 29 samples of stained or tinged cotton and other materials not incriminated in outbreaks of the illness. Aberrant strains of this microörganism were isolated from 10 of the samples in which the typical cotton bacterium could not be demonstrated.

The typical morphological characteristics and biochemical reactions of the cotton bacterium are listed in Table 2.

On the basis of its morphological characteristics and its biochemical reactions, the cotton bacterium has been tentatively placed in the genus *Aerobacter*.

PATHOGENICITY AND TOXICITY TESTS

Recovery of cotton bacterium from cases of illness—Blood specimens and nose and throat swab cultures were obtained from approximately 40 individuals, who had contracted this sickness and from 10 control individuals, who had not had the disease. The cotton bacterium was never isolated from blood cultures obtained from cases nor from nose and throat swab cultures except in a limited number of cases in which the swabs were taken during or immediately after the illness.

Pathogenicity of cotton bacterium to animals—A series of experiments was carried out with animals to determine the pathogenicity of the cotton bacterium and the toxicity of filtrates obtained from broth cultures of this organism and from saline extracts of stained cotton. One to two ml. of these filtrates were the minimum quantities required to kill rabbits weighing 1.5 to 2.0 kg. The intranasal application of the cotton bacterium in several species of animals did not produce any ill effects. Massive doses of cotton bacterium cultures and culture filtrates were required to kill mice and guinea pigs when injected intraperitoneally.

TABLE 3

Dolman and Hammon Tests for Toxin

Cat No.	Weight Kg.	Injections: Type	Injections: Quantity ml.	Injections: Material	Reaction: Time Hrs.	Reaction: Symptoms
1	1.30	Intraperitoneal	5.0	Filtrate 7 day tryptose broth culture boiled 20 min.	4	Vomiting
2	1.42	Intravenous	3.0	"	3	Vomiting—Died within 24 hrs. — Autopsy findings negative
3	1.25	Intraperitoneal	5.0	Filtrate from saline extract of stained cotton boiled for 20 min.	24	No reaction
4	0.64	Intravenous	4.0	"	4	Diarrhea and vomiting
5	0.80	Intraperitoneal	5.0	Filtrate from 7 day tryptose broth culture boiled for 20 min.	2½	Vomiting
6	0.80	Intravenous	3.0	"	4	Diarrhea and slight vomiting—Died within 4–21 hrs. Autopsy findings neg.
7	0.62	Intraperitoneal	5.0	Filtrate from saline extract of good cotton boiled 20 min.	24	No reaction
8	0.75	Intravenous	5.0	"	24	" "
9	0.91	Intraperitoneal	5.0	Sterile tryptose broth	24	" "
10	0.94	Intravenous	5.0	"	24	" "

Dolman and Hammon tests for enterotoxin—A gastrointestinal upset, accompanied by nausea, vomiting, and sometimes diarrhea, were among the symptoms occurring in cases of this illness. It, therefore, seemed advisable to test filtrates from broth cultures of the cotton bacterium and saline extracts of stained cotton by recognized tests for the detection of enterotoxin.

One of the most widely accepted tests for the detection of staphylococcus enterotoxin is the intra-abdominal kitten test, first described by Dolman, Wilson, and Cockcroft.[6] This test involves the intraperitoneal injection of 3.0–5.0 ml. of specially prepared culture filtrates into young kittens after the inactivation of lethal exotoxins by heat, formalin, or by neutralization by specific antitoxin. After a variable period of time, enterotoxic filtrates produced vomiting and diarrhea.

Hammon[7] recently reported an improved intravenous injection method, which is claimed to eliminate nonspecific or false positive reactions due to peritoneal irritation. In performing this test, the test materials are injected into the saphenous vein of the leg of mature cats without anesthesia. The dosage varies from 0.5 ml. to 5.0 ml. depending upon the potency of the toxin. The toxic filtrates must, of course, be treated to inactivate the lethal factors before injection.

Cats weighing 600 to 1,400 gm. were employed in these tests. All culture filtrates and cotton extract filtrates were heated to boiling for 20 minutes before injection.

The dosages employed and the results obtained with each method of administration are recorded in Table 3.

These tests demonstrated that Berkefeld filtrates from 7 day tryptose broth cultures of the cotton bacterium and saline extracts of stained cotton contained heat-stable toxic substances capable of inducing vomiting and diarrhea in cats. Gastrointestinal symptoms were not induced in the control animals either through the intravenous or intraperitoneal injection of sterile tryptose broth or Berkefeld filtrates from saline extracts of normal cotton.

Pathogenicity of the cotton bacterium on cotton seedlings—In order to ascertain whether the cotton bacterium was capable of infecting cotton plants, cotton seedlings were grown in large flower pots that had been swabbed with mer-

cury bichloride, dried, and filled with sterilized top soil. The cotton seed used was examined for contaminants before planting. Sterile battery jars were used to cover the germinating seed and to insure a humid atmosphere.

Seedlings grown from seed that had been incubated in a tryptose broth culture of the cotton bacterium for 24 hours at 37° C. immediately before planting and seedlings that were irrigated with broth cultures of the cotton bacterium appeared to be normal and like the control plants over a period of one month. The leaves of normal seedlings, cleansed by swabbing with alcohol and inoculated by a needle prick or by rubbing a broth culture of the cotton bacterium on the underside of the leaves, did not develop lesions. Positive control plants similarly inoculated with *Phytomonas malvacearum* developed leaf spots. Negative controls treated with physiological saline and with sterile tryptose broth did not develop lesions.

The cotton bacterium could not be recovered from the leaves of cotton seedlings one month after inoculation; however, it was recovered from top soil three months after inoculation. As a result of these tests, it was concluded that the cotton bacterium is not pathogenic for cotton seedlings under the conditions of these experiments.

Hopkins [4] described two species of bacteria causing an internal rot of cotton bolls. From the meager descriptions given, it appears that one of these microörganisms is similar to the typical cotton bacterium which has been isolated during this investigation. He states that these bacteria are capable of decomposing and staining the immature cotton fibers within the boll. Other portions of the cotton plant are not attacked.

SEROLOGICAL STUDIES

Because this acute disease resembles an intoxication rather than an infection and because of the high incidence of the cotton bacterium in stained cotton to the exclusion of other miscellaneous types of microörganisms, the following serological studies were undertaken to ascertain whether the cotton bacterium liberated a toxic substance which might be capable of inducing the symptom complex.

FIGURE 3—Necrotic Areas Denote Positive Shwartzman Reactions Produced by Berkefeld Filtrates from 48 hour and 7 day Tryptose Broth Cultures of the Cotton Bacterium

Shwartzman reaction[5]—This reaction, using mature rabbits as the test animals, is employed to demonstrate "the phenomenon of local skin reactivity to certain toxic substances." These substances are generally derived from bacteria. In demonstrating this phenomenon, sensitivity is induced by intradermal injections (preparatory injections) of 0.25 to 0.5 ml. of the toxic substances. Reactivity is induced by intravenous injections (reacting injections) of 1.0 to 3.0 ml. of the toxic filtrates per kg. body weight, 24 hours after the preparatory injections. A positive Shwartzman reaction is evidenced by a severe hemorrhagic necrosis, usually beginning within 4 hours after the reacting injection at the site of the intradermal injection. These sites become swollen and dark blue with a red border. A typical positive Shwartzman reaction is shown in Figure 3. Animals are prepared for test by clipping or by epilating the skin of the flank with barium sulfide 24 hours prior to the initial injection.

The material tested in these studies included heated and unheated Berkefeld filtrates from 7 day tryptose broth cultures of the cotton bacterium, heated and unheated filtrates from saline extracts of stained cotton, and filtrates from saline extracts of normal cotton. Sterile tryptose broth and sterile physiological saline (0.85 per cent NaCl) were employed as control solutions.

The results of a representative series of Shwartzman tests are shown in Table 4.

These experiments revealed the following: (a) A heat-stable endotoxin-like substance is liberated by the mucoid cotton bacterium; (b) a similar toxic substance is present in filtrates from saline extracts of stained cotton incriminated in outbreaks of illness; (c) that rabbits may be cross sensitized with filtrates from either source; and (d) that this endotoxic substance is not present in filtrates from saline extracts of normal cotton, in sterile tryptose broth or physiological saline.

It was also demonstrated by the Shwartzman reaction that homologous immune sera prepared through rabbit immunization with culture filtrates of the mucoid cotton bacterium, and with

TABLE 4

Shwartzman Reaction Tests for Endotoxin

Rabbit No.	Weight Kg.	Sensitizing Injections		Reacting Injections		Skin Reaction	
		* Material	Quantity ml.	* Material	Quantity ml.	Degree	Type
1	3.81	D	0.25	D	1.25	++++	Hemorrhagic necrosis
2	3.74	D+Se	0.25	D	1.25	—	No reaction
3	2.43	K	0.25	K	1.0	++++	Hemorrhagic necrosis
4	3.42	F	0.25	F	8.0	+++	" "
5	2.92	F	0.25	D	3.0	++++	" "
6	4.44	D	0.25	F	9.0	++++	" "
7	3.52	G	0.25	G	5.0	—	No reaction
8	2.86	G	0.25	D	1.5	—	" "
9	2.81	D	0.25	G	9.0	—	" "
10	3.60	F	0.25	G	8.0	—	" "
11	2.81	T	0.25	T	5.0	—	" "
12	2.86	T	0.25	D	1.5	—	" "
13	3.65	D	0.25	T	9.0	—	" "

* D = Berkefeld filtrate from 7 day tryptose broth culture "cotton bacterium"
Se = Rabbit immune serum
K = Saline suspension from 18 hour potato-carrot-dextrose agar slant culture of "cotton bacterium" heated to boiling for 30 min.
F = Berkefeld filtrate from saline extract of stained cotton
G = Berkefeld filtrate from saline extract of good cotton
T = Sterile tryptose broth (Bacto)

saline extracts of stained cotton contained antibodies capable of neutralizing the endotoxin-like substance present in these materials.

Agglutination tests—These tests were employed to determine (a) whether antibodies are produced in human or animal serum in response to the introduction into the body of viable or killed cultures of the cotton bacterium, filtrates of broth cultures (endotoxin) of the bacterium, and filtrates from saline extracts of stained cotton, (b) whether antibodies for the cotton bacterium are present in normal human or animal serum, from individuals not known to have had this illness or animals which have not received immunizing injections, (c) whether antibodies are produced in rabbits, in response to the introduction of filtrates from saline extracts of normal cotton, free from the cotton bacterium.

The *sera* tested were as follows: (a) human sera obtained from individuals in several states who had had the acute illness 24 hours to several weeks prior to the time of obtaining the sera; (b) sera obtained from 4 baboons at known intervals after a 7 hour exposure to stained cotton, (c) sera obtained from rabbits given repeated, intermittent, intravenous injections of saline suspensions of viable and killed organisms, Berkefeld filtrates from 24 and 48 hour and 7 day tryptose broth cultures of these organisms, and filtrates from saline extracts of stained cotton, (d) control sera obtained from individuals not known to have had the illness, from 1 baboon not exposed to stained cotton dust, from a rabbit injected with a filtrate of a saline extract of normal cotton, and from a normal non-immunized rabbit.

The *antigens* used for these tests consisted of filtered, standardized uniform suspensions of 18–24 hour potato-carrot-dextrose agar slant cultures of the typical bacterium isolated from cotton samples which had been implicated in outbreaks of the acute illness.

The *method* consisted of diluting the serum in the usual manner with sterile physiological saline throughout a range from 1–10 to 1–5,120; 0.5 ml. of antigen was added to each dilution and after thorough mixing, all agglutination tubes were incubated in a constant temperature bath at 37° C. for 2 hours, followed by refrigeration at 5° C. overnight. Many of the human sera, including some of the controls, and all baboon sera contained variable low titer agglutinins for the cotton bacterium. The explanation for this fact is unknown. However, it would seem to indicate that because the cotton bacterium is closely related to certain types of bacteria commonly found in the intestinal tract of primates, it may be agglutinated by their antibodies. It would also indicate that a marked production of antibodies in the blood is not stimulated by exposure to the cotton bacterium or its toxic products, under the conditions described herein.

Identical antibodies, *i.e.*, antibodies capable of agglutinating typical culture antigens of the cotton bacterium, were produced in rabbit blood through immunizing injections with all saline suspensions of viable and killed organisms, by Berkefeld filtrates from 24 and 48 hour and 7 day tryptose broth cultures, and by filtrates from saline extracts of stained cotton. No agglutinins for the cotton bacterium were produced by those rabbits injected with filtrates from saline extracts of normal cotton, nor were such agglutinins present in the blood serum of normal non-immunized rabbits. The maximum agglutinin titers of these immune sera for typical cultures of the cotton bacterium are shown in Table 5.

Each animal was bled and the agglutinin titer of the immune serum was checked at intervals throughout a period of one year. There was a tend-

TABLE 5

Maximum Agglutination Titer of Rabbit Immune Sera

Antigen = Uniform Saline Suspension of "Cotton Bacterium"

Serum * No.	Serum Dilutions 1/10	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120	Serum Control	Antigen Control
1	4+	4+	4+	4+	4+	4+	2+	2+	2+	+	—	—
2	4+	4+	4+	4+	4+	4+	4+	4+	3+	3+	—	—
3	4+	4+	4+	4+	4+	4+	3+	2+	+	±	—	—
4	4+	4+	4+	4+	4+	4+	3+	3+	2+	+	—	—
5	4+	4+	4+	4+	4+	3+	3+	2+	+	±	—	—
6	4+	3+	3+	3+	3+	3+	2+	2+	+	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	—	—	—

* Serum 1 = Rabbit immunized with a saline suspension of a "cotton bacterium" culture obtained from an 18–24 hr. growth on an agar slant
" 2 = Same as rabbit 1 except the suspension was heated in a boiling water bath for 20 min.
" 3 = Rabbit immunized with a filtrate from an 18–24 hr. tryptose broth culture
" 4 = Rabbit immunized with a filtrate from a 48 hr. tryptose broth culture
" 5 = Rabbit immunized with a filtrate from a 7 day tryptose broth culture
" 6 = Rabbit immunized with a filtrate from a saline extract of stained cotton
" 7 = Rabbit immunized with a filtrate from a saline extract of normal cotton
" 8 = Normal rabbit serum

TABLE 6

Agglutination Tests Showing Decrease in Antibody Titer

Antigen: Uniform Saline Suspension of "Cotton Bacterium"
Serum: Rabbit Immunized with a Filtrate from Tryptose Broth Culture of "Cotton Bacterium"

Bleeding No.	Date of Test	Serum Dilutions 1/10	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120	Serum Control	Antigen Control
*1st	9/10/41	4+	4+	4+	4+	4+	3+	2+	±	—	—	—	—
2nd	9/25/41	4+	4+	4+	4+	4+	4+	3+	2+	+	±	—	—
3rd	11/13/41	4+	4+	4+	4+	3+	2+	2+	+	+	+	—	—
4th	11/27/41	4+	4+	4+	3+	2+	+	+	±	—	—	—	—
5th	3/ 9/42	4+	4+	3+	2+	+	±	—	—	—	—	—	—
6th	4/17/42	4+	4+	3+	2+	+	±	—	—	—	—	—	—
7th	5/19/42	4+	3+	2+	+	±	—	—	—	—	—	—	—
8th	6/22/42	4+	4+	3+	2+	+	—	—	—	—	—	—	—
9th	7/16/42	3+	3+	2+	2+	+	±	—	—	—	—	—	—
10th	8/18/42	4+	3+	2+	+	±	—	—	—	—	—	—	—

* The first test was carried out before immunization was complete

TABLE 7

Agglutination Tests Showing Decrease in Antibody Titer

Antigen: Uniform Saline Suspension of "Cotton Bacterium"
Serum: Rabbit Immunized with a Saline Extract of Stained Cotton

Bleeding No.	Date of Test	Serum Dilutions 1/10	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120	Serum Control	Antigen Control	Remarks
*1st	9/10/41	4+	4+	4+	4+	4+	3+	2+	±	—	—	—	—	
2nd	9/25/41	4+	3+	3+	3+	3+	3+	2+	2+	+	—	—	—	
3rd	10/21/41	4+	4+	4+	4+	3+	2+	2+	+	±	—	—	—	
4th	11/18/41	4+	4+	3+	2+	2+	+	±	—	—	—	—	—	
5th	12/19/41	3+	3+	2+	+	—	—	—	—	—	—	—	—	
6th	1/26/42	4+	3+	2+	+	±	—	—	—	—	—	—	—	
7th	3/ 9/42	3+	3+	2+	+	±	—	—	—	—	—	—	—	
8th	4/17/42	3+	2+	2+	+	±	—	—	—	—	—	—	—	
9th	5/19/42	3+	2+	+	—	—	—	—	—	—	—	—	—	Rabbit died 5/11/42. No further tests.

* The first test was carried out before immunization was complete

ency for the titer of the serum to decrease gradually with increasing length of time after the last injection of the antigen. This is shown in Tables 6 and 7, which show the decrease in the agglutinin titer of the immune sera obtained through immunization with culture filtrates of the typical cotton bacterium and with filtrates from a saline extract of stained cotton. These immune sera were utilized to separate the cultures isolated from the cotton samples into a number of serological groups. These tests demonstrated that the majority of the organisms isolated from stained cotton belonged to the same, or closely related serological groups.

Precipitation tests—These tests were carried out with two of the types of blood serum available for this investigation, *i.e.*, human and rabbit sera, which were obtained or prepared as described under the general discussion of agglutination tests. These studies were undertaken in order to ascertain whether blood sera from human cases of this illness or rabbit immune sera, prepared as previously described, contained antibodies capable of precipitating precipitinogens prepared from cultures of the cotton bacterium and saline extracts of stained cotton.

Two precipitinogens were employed for these tests. One was prepared from an 18 hour tryptose broth type culture of the cotton bacterium by Lancefield's [8] method; the other was prepared from a physiological saline extract of stained cotton by filtration through a Berkefeld N-candle and concentration by vacuum distillation at 30–32° C.

The procedure for these tests consisted in placing 0.2 ml. of undiluted serum in the bottom of each of nine 3 mm. tubes. Four-tenths ml. of the antigen, both undiluted and that diluted with sterile physiologic saline, over a range of 1:5 to 1:320 was then laid over the serum with a capillary pipette. One tube containing 0.4 ml. of undiluted antigen and 0.2 ml. of physiologic saline and a second tube containing 0.2 ml. of serum and 0.4 ml. of physiologic saline were prepared for controls. The tubes were incubated for 30 minutes at room temperature and then observed for ring formation. Incubation was continued for 2 hours at

TABLE 8

Precipitin Tests on Immune Rabbit Sera

Precipitinogen: "Cotton Bacterium" culture prepared by Lancefield's Method

Rabbit Serum Nos.*	Antigen Dilutions								Serum Control	Antigen Control
	Undil.	1/5	1/10	1/20	1/40	1/80	1/160	1/320		
1	4+	4+	4+	3+	2+	+	±	−	−	−
2	4+	4+	4+	4+	2+	+	+	−	−	−
3	3+	2+	2+	+	+	+	±	−	−	−
4	3+	3+	2+	2+	2+	+	+	±	−	−
5	3+	3+	2+	2+	2+	+	±	−	−	−
6	4+	3+	3+	2+	2+	+	±	−	−	−
7	±	−	−	−	−	−	−	−	−	−
8	−	−	−	−	−	−	−	−	−	−
Precipitinogen: Vacuum distillate from stained cotton extract filtrate										
1	3+	3+	3+	3+	2+	2+	+	−	−	−
2	4+	4+	3+	3+	2+	2+	+	±	−	−
3	3+	+	±	−	−	−	−	−	±	−
4	3+	2+	2+	±	−	−	−	−	−	−
5	3+	3+	3+	2+	2+	+	±	±	±	−
6	3+	3+	2+	2+	+	±	−	−	−	−
7	3+	−	−	−	−	−	−	−	−	−
8	3+	−	−	−	−	−	−	−	−	−

* These serum Nos. refer to the same rabbit sera listed in Table 5. Serum nonphenolated.

37° C., the tubes then thoroughly agitated and stored at 5° C. overnight. Final examination for precipitates was then made.

Most of the human sera, including the controls, gave positive precipitation tests in low dilutions with both precipitinogens. Rabbit sera from normal non-immunized animals and from the animals injected with filtrates from a saline extract of normal cotton did not show any significant precipitin titer. All other rabbit sera gave positive precipitation tests with both precipitinogens. The results of the precipitation tests with rabbit sera are shown in Table 8.

The results of these tests indicate (a) that sera from rabbits immunized with viable or killed cultures of the cotton bacterium, Berkefeld filtrates from tryptose broth cultures of this organism, or with filtrates from saline extracts of stained cotton, contain high titer precipitins for the precipitinogenic substance in the cotton bacterium, and (b) that stained cotton contained an extractable substance which is precipitated by these immune sera.

BIOLOGICAL STUDIES

Animal exposure tests—Animal exposure experiments were undertaken in an attempt to discover some species of animal susceptible to this acute disease, which appeared to be due to the endotoxin-like substance present in stained cotton.[1] Baboons, kittens, hamsters, guinea pigs, monkeys, rabbits, and chickens were exposed to various types of cotton dusts for one or more 7 hour periods. While three of the baboons exposed to unsterilized stained cotton developed mild symptoms of the disease, none of the other animals exhibited any symptoms. It was concluded from the results of all animal exposure tests that none of the common experimental animals are very susceptible to this unnamed illness.

Human exposure experiments—Since this illness could not be definitely produced in any of the species of laboratory animals tested, human exposure experiments were undertaken. These experiments have already been reported in detail [1]; hence they are only summarized at this time. Three test individuals were exposed for 10 minutes to each type of cotton dust investigated. Two control individuals were exposed to normal cotton dust for 10 minutes on every occasion when the test individuals were exposed to other types of cotton. A week or more was allowed to elapse between the exposures to each type of cotton material. Each individual was given a complete physical examination prior to each exposure. Records were kept of the temperature, pulse rate, respiratory rate, changes in blood picture, and development of symptoms.

The three test individuals did not reveal any signs or symptoms after exposure to normal cotton, nor did the two control subjects, who were repeatedly exposed to normal cotton dust under the same conditions, show any signs or symptoms incident to such exposure. Two of the test individuals developed minor symptoms of illness subsequent to exposure to sterilized stained cotton. It is thought that these mild symptoms were due to minute quantities of the heat-stable endotoxin, which were not destroyed by sterilization.

The same type of disabling illness was produced experimentally in the three test individuals by inhalation of (a) dust from normal cotton contaminated with the cotton bacterium and its products, and (b) dust from stained cotton containing a high incidence of the cotton bacterium. This illness was characterized by its sudden onset, 1½ to 3 hours after exposure, its short duration, *i.e.*, 24–72 hours, and sudden high leucocytosis with a moderate increase in band and segmented cells.

One test individual was exposed for

one minute to a fine mist of a sterile Berkefeld filtrate from a 7 day tryptose broth culture of the cotton bacterium several weeks after exposure to the stained cotton dust. Symptoms of illness began within 45 minutes. Signs and symptoms were identical in type, severity, and duration with those noted after exposure to the dust from stained cotton. The exposure of four individuals for one minute to a fine mist of sterile tryptose broth of the same type as employed for toxin production by the cotton bacterium failed to produce any signs or symptoms of illness.

It is evident that the illness following these exposures was caused by the endotoxin-like products of the cotton bacterium. The symptoms of this illness were similar to those reported in outbreaks of illness occurring among workers in industries using low-grade stained cotton.

The three individuals who had experienced repeated attacks of experimentally induced illness through exposure to contaminated or stained cotton dust and the two control individuals who had been repeatedly exposed to the dust from normal cotton were given intradermal injections with 0.1 ml. of the test materials.

Berkefeld filtrates from broth cultures of the cotton bacterium and from the saline extracts of stained cotton caused severe skin reactions and systemic symptoms within 3 hours in the individuals who had been exposed to normal cotton dust, as well as in the three individuals who had experienced attacks of illness. These reactions were characterized by marked erythematous swelling, which was extremely painful on pressure. The three test individuals and one control subject experienced headache and generalized muscular pains within 10 hours. Two of the test subjects and one control subject had a severe lymphangitis and lymphadenitis of the arm. None of the five individuals developed any significant skin reaction following the intradermal injections of sterile tryptose broth, sterile physiological saline, or the filtrates from the saline extract of normal cotton. The nature of the skin reactions denoted a definite intoxication rather than a sensitization to the substances injected.

DISCUSSION

As previously discussed,[1] the symptomatology and other findings encountered in an acute illness among workers using low-grade stained cotton except for their greater severity are similar to those in the so-called mill fever and Monday fever found in cotton mill workers. These diseases follow the inhalation of cotton dust. While the cause of these diseases has never been completely explained, they have been attributed to (a) the action of the cotton dust on the mucous membranes of the respiratory passages,[9] (b) histamine[9] present in cotton dust, and (c) to the irritating soluble proteins present in microscopic particles of cotton dust.[10]

Mill fever has never been attributed to bacteria or their toxic products. However, the British Departmental Committee on Dust in Cardrooms in the Cotton Industry in 1932[9] reported the presence of large numbers of Gram-negative bacilli in cotton dust. No importance was attributed to these bacteria since no factor common to the bacteriology of the dust and the patients' sputum was found.

From the results of the work in this laboratory, it seems logical to assume that the toxic products of the cotton bacterium responsible for illness among workers in rural mattress making centers and in cotton seed plants using low-grade stained cotton, may also be the etiologic agent responsible for mill fever or Monday fever.

SUMMARY AND CONCLUSIONS

The results of a further investigation

into the etiology of an acute illness among workers using low-grade, stained cotton are presented.

One hundred and twenty-two samples of stained, tinged, and normal cotton, cotton dust, linters, cotton seed, soil, hemp dust, and grain elevator screenings were studied.

Samples of cotton incriminated in outbreaks of illness contained no toxic gases, chemically extractable substances, insecticides, or pathogenic fungi to which the illness could be attributed. These samples, however, contained a Gram-negative, rod-shaped bacterium in numbers ranging from 3,000,000 to more than 10,000,000 per gm. It was not isolated from high-grade cotton. Seventy of 81 samples of materials reported to have caused illness contained the same strain of the bacterium as determined by biochemical tests. This bacterium is actively motile and encapsulated. Its Imvic reaction is − − + +; it ferments lactose and liquefies gelatin slowly, and it produces acid and gas in almost all differential media except adonitol, inositol, and inulin. On the basis of these biochemical findings, it has been tentatively placed in the genus *Aerobacter*.

A heat-stable, endotoxin-like substance was demonstrated in filtrates from saline extracts of stained cotton, in filtrates from broth cultures of the cotton bacterium, and in killed suspensions of the same organism. Homologous antibodies, which were capable of neutralizing or precipitating this toxic substance, were produced in rabbits through injections with these materials. It is believed that this toxic substance is in the nature of an endotoxin because of its (a) heat-stability, (b) lower antigenic capacity, and (c) increase with age of culture or destruction of cells.

The same type of disabling illness could be produced in humans by inhalation of (a) dust from normal cotton contaminated with the cotton bacterium and its culture filtrates, (b) dust from stained cotton containing a high incidence of the cotton bacterium, and (c) a fine mist of a sterile filtrate from cultures of this microörganism. The severity of symptoms and physical findings are dependent upon the presence and concentration of the cotton bacterium or its products in the cotton dust inhaled and upon the duration of exposure.

Intradermal injections of the filtrates of stained cotton extracts and culture filtrates of the cotton bacterium in man resulted in the production of severe inflammatory lesions characteristic of an intoxication rather than a hypersensitivity.

The clinical findings developed experimentally in humans were the same as those reported in cases of acute illness among workers exposed to high concentrations of stained cotton dust. The clinical syndrome of this illness is similar to that of an acute intoxication. Since this acute illness closely resembles mill fever, Monday fever, and gin fever in cotton mill workers, heckling fever, mill fever, grain fever, and hemp fever reported in workers inhaling flax, jute, grain and hemp dust respectively, it is suggested that the toxic products liberated by the cotton bacterium or some closely related species may be the etiological agent for these diseases.

It was concluded that the acute illness occurring among workers using low-grade stained cotton is caused by the inhalation of an endotoxin-like substance produced by a Gram-negative rod-shaped bacterium contained in or on dust from stained cotton. This microörganism has been tentatively placed in the genus *Aerobacter*.

REFERENCES

1. Neal, P. A., Schneiter, R., and Caminita, B. H. Report on Acute Illness Among Rural Mattress Makers Using Low-grade Stained Cotton. *J.A.M.A.*, 119: 1069–1071 (Aug. 1), 1942.

2. U. S. Dept. of Agr., Bur. Agr. Economics. The Classification of Cotton. *Misc. Publ. 310*, 54 pp. Washington, D. C., May, 1938.

3. Trice, M. F. Cardroom Fever. *Textile World J.*, 90:68 (Mar.), 1940.

4. Hopkins, J. C. An Introductory Note on Two Bacteria Causing an Internal Rot of Cotton Bolls. *Ann. Applied Biol.*, 13:260–265, 1926.
5. Shwartzman, G. *Phenomenon of Local Tissue Reactivity and Its Immunological, Pathological, and Clinical Significance.* Harper, 1937.
6. Dolman, C. E., Wilson, R. J., and Cockcroft, W. H. A New Method of Detecting Staphylococcus Enterotoxin. *Canad. Pub. Health J.*, 27, 10:489–493 (Oct.), 1936.
7. Hammon, W. McD. Staphylococcus Enterotoxin: An Improved Cat Test. *Chem. & Immunol. Studies*, 31, 11:1191–1198 (Nov.), 1941.
8. Lancefield, R. C. A Serological Differentiation of Human and Other Groups of Hemolytic Streptococci. *J. Exper. Med.*, 57, 4:571–595 (Apr.), 1933.
9. *Report of the Departmental Committee on Dust in Cardrooms in the Cotton Industry.* Gt. Britain Home Office. 96 pp. London, 1932.
10. Prausnitz, C. Investigations on Respiratory Dust Diseases in Operatives in the Cotton Industry. Report Issued by the Medical Research Council, *Special Report Series 212.* 73 pp. London, 1936.

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Public Health Degrees and Certificates Granted in the United States and Canada During the Academic Year 1941-1942*

THE Committee on Professional Education of the American Public Health Association presents a report of public health degrees and certificates granted in the academic year 1941–1942. With the exception of the public health nursing tables, the committee has included only graduate students enrolled in courses leading to graduate degrees and certificates. The basis for the record is *the number of students who received degrees* rather than the number of degrees granted in the specified period.

Graduate Students Enrolled and Degrees Granted in Public Health Engineering and Sanitary Engineering Courses in the Academic Year 1941–1942

TABLE 1

Name of University	*Number of Graduate Students Registered*	*Graduate Degrees Offered*	*Number of Students Receiving Each Degree*
Agricultural & Mechanical College of Texas	8	M.S.	2
		Ph.D.	0
Cornell University	1	M.C.E.	1
Harvard University	47 [1]	M.S.	13
		Sc.D.	2
		E.S.M.D.T. Certif.[2]	24
Iowa State College	2	M.S.	2
		Ph.D.	0
Johns Hopkins University	6	Dr.Eng.	2
		M.C.E.	0
		M.P.H.	2
Massachusetts Institute of Technology	18	S.M.	2
		M.P.H.	7
		Sc.D.	1
		Ph.D.	1
		Dr.P.H.	1
		C.P.H.	2
New York University	28	M.C.E.	5
		Dr.Eng.Sc.	0
Pennsylvania State College	1	Ph.D.	0
Rutgers University	0	M.S.	0
		M.A.	0
		Ph.D.	0
		M.Ed.	0
		Dr.Ed.	0
Stanford University	2	Eng. in C.E.–San. Eng.	0

* For previous reports see *A.J.P.H.*, Vol. 31, p. 1306; Vol. 30, p. 1456; Vol. 29, p. 1338; Vol. 28, p. 863; Vol. 27, p. 1267; Vol. 26, p. 819; Vol. 25, p. 341; Vol. 23, p. 1124.

[1] 3 part-time students
30 in 3 or 4 month full-time courses for the Navy or Public Health Service

[2] Engineering, Science and Management Defense Training Certificate

TABLE 1 (Cont.)

Name of University	*Number of Graduate Students Registered*	*Graduate Degrees Offered*	*Number of Students Receiving Each Degree*
University of Alabama	1	M.S. in San. Eng.	0
		M.S. in P.H. Eng.	0
University of California	2	M.S. in San. Eng.	2
University of Illinois	2	M.S.	0
		Ph.D.	0
University of Kansas	0	M.S.	0
University of Michigan	22	M.S.P.H.	2
		M.S.P.H.E.	2
		M.S.E.	1
		M.S.	5
		M.P.H.	3
University of Minnesota	8	M.P.H.	0
		M.S.	0
University of Missouri	6	M.S. in C.E. (San.)	2
University of North Carolina	6	M.S. in San. Eng.	2
		M.S.P.H.	0
		M.P.H.	0
University of Toronto	3	M.A.Sc.	3
West Virginia University	0	M.S.C.E.	0
Totals	163		80

Classification of Graduate Engineering Degrees and Certificates Granted in the Academic Year 1941–1942

TABLE 2

Degree or Certificate	*Number of Students Receiving Degrees*	*Number of Schools Offering Each Degree*
Doctor of Philosophy	1	6
Doctor of Public Health	1	1
Doctor of Engineering	2	1
Doctor of Science	3	2
Doctor of Engineering Science	0	1
Master of Public Health	12	5
Master of Science in Public Health	2	2
Master of Science in Public Health Engineering	2	2
Master of Science in Sanitary Engineering	4	3
Master of Science in Civil Engineering	2	2
Master of Science in Engineering	1	1
Master of Science	24	9
Master of Civil Engineering	6	3
Engineer in Civil Engineering	0	1
Certificate in Public Health	2	1
Engineering, Science and Management Defense Training Certificate	24	1
Doctor of Education	0	1
Master of Education	0	1
Master of Arts in Science	3	1
Master of Arts	0	1
Total	89	

In the academic year 1940–1941, 130 graduate students were enrolled in public health engineering and sanitary engineering courses as compared with 163 in the academic year 1941–1942. Graduate degrees and certificates granted in the academic year 1940–1941 totaled 59 as compared with 89 in the year 1941–1942.

Enrollment in Public Health Courses and Degrees and Certificates Granted in the Academic Year 1941–1942

(Exclusive of Engineering and Nursing Students)

Number of graduate students enrolled and public health degrees and certificates conferred during the academic year 1941–1942 by United States and Canadian universities. Unless otherwise indicated, courses require at least one year of residence. The professional background of the students is given where known.

TABLE 3

Name of Institution	*Total Number of Graduate Students Registered*	*Physicians*	*Dentists*	*Nurses*	*Health Educators*	*Public Health Engineers*	*Sanitarians*	*Public Health Laboratory Workers*	*Statisticians*	*Nutritionists*	*Veterinarians*	*Teachers*	*Non-Medical Administrators*	*Physical Educators*	*Unclassified*	*Graduate Degrees Offered*	*Number of Students Receiving Each Degree and Certificate*
DeLamar Institute of Public Health, Columbia University	21	18	..	1	..	..	..	..	..	..	..	..	..	..	2	Dr.P.H. M.S.P.H.	0 20
Harvard School of Public Health	52	47	2	..	..	..	..	..	..	..	1	..	..	..	2	Dr.P.H. M.P.H. C.P.H.	3 26 0
Johns Hopkins University	108	72	..	..	..	..	..	..	..	..	..	..	..	..	36	Dr.P.H. M.P.H. Sc.D. in Hyg. Sc.M. in Hyg.	4 59 10 3
Loyola University	11	4	1	..	..	1	2	1	..	..	..	2	..	..	..	Dr.P.H. M.S.P.H.	0 0
Massachusetts Institute of Technology	27	5	1	..	10	..	..	10	..	..	..	..	..	1	..	Dr.P.H. M.P.H. D.Sc. C.P.H. S.M.	1 6 1 2 1
McGill University	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	D.P.H.[1] D.V.P.H.[2]	0 0
School of Tropical Medicine, Department of Public Health, Puerto Rico	3	3	..	..	..	..	..	..	..	..	..	..	..	..	..	M.S.P.H.	3
State College of Washington	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	C.P.H.	0

TABLE 3 (Cont.)

Name of Institution	Total Number of Graduate Students Registered	Physicians	Dentists	Nurses	Health Educators	Public Health Engineers	Sanitarians	Public Health Laboratory Workers	Statisticians	Nutritionists	Veterinarians	Teachers	Non-Medical Administrators	Physical Educators	Unclassified	Graduate Degrees Offered	Number of Students Receiving Each Degree and Certificate
University of California	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	A.M.	1
University of Kentucky	6	4	..	..	..	..	..	..	..	..	..	..	..	..	2	M.S.P.H.	2
University of Michigan	81	32	8	..	26	..	7	5	3	..	..	..	..	..	..	Dr.P.H. M.P.H. M.S.P.H.	2 20 39
University of Minnesota	14	9	..	..	..	..	2	1	..	..	..	..	..	..	2	M.P.H. M.S.	6 2
University of North Carolina	48	9	..	..	1	..	22	7	1	..	1	3	..	..	4	Dr.P.H. Ph.D. M.P.H. M.S.P.H. C.P.H.	0 2 2 7 0
University of Pennsylvania	32	20	..	..	..	..	..	..	..	..	1	..	..	..	11	Ph.D. M.P.H. M.S.	4 10 1
University of Toronto	24	24	..	..	..	..	..	..	..	..	..	..	..	..	..	D.P.H.[1]	19
Yale University	37	11	1	1	11	2	2	5	1	1	..	..	2	..	..	Dr.P.H. Ph.D. M.P.H.	1 2 10
Totals	466	259	13	2	49	3	35	29	5	1	3	5	2	1	59		269

[1] Diploma in Public Health
[2] Diploma in Veterinary Public Health

Classification of Public Health Degrees and Certificates Granted in the Academic Year 1941–1942

(Exclusive of Engineering and Nursing Degrees and Certificates)

TABLE 4

Degree or Certificate	*Number of Students Receiving Degrees and Certificates*	*Number of Schools Offering Each Degree and Certificate*
Doctor of Public Health	11	8
Doctor of Science	14	2
Doctor of Philosophy	8	3
Master of Public Health	139	8
Master of Science in Public Health	71	6
Master of Science	4	3
Diploma in Public Health	19	2
Certificate in Public Health	2	4
Master of Arts	1	1
Diploma in Veterinary Public Health	0	1
Total	269	

In the academic year 1940–1941, 658 graduate students were enrolled as compared with 466 in the academic year 1941–1942. Graduate degrees and certificates granted in the academic year 1940–1941 totaled 332 as compared with 269 in the year 1941–1942.

Degrees and Certificates Granted in Public Health Nursing Courses for the Academic Year Ending June 30, 1942

Table 5, below, indicates the number of students who received degrees and certificates for the academic year ending June 30, 1942. These figures have been compiled by the National Organization for Public Health Nursing and are printed here with permission.

TABLE 5

	Number of Students Receiving Each Degree and Certificate		
Name of University	*Baccalaureate Degrees*	*Masters Degrees*	*Certificates*
Catholic University of America	1	0	6[1]
Columbia University	24	12	0[2]
Duquesne University	0	0	4
George Peabody College for Teachers	24	4	77
Indiana University	10	0	10
Loyola University	4	0	24
Marquette University	1	0	15
Medical College of Virginia	0	0	16
New York University	..[3]	..[3]	..[3]
Richmond Professional Institute, College of William and Mary	7	0	50
St. John's University	0	0	2[1]
St. Louis University	9	0	1
Seton Hall College[4]	0	0	0[1]
Simmons College	1	0	41
Syracuse University	9	0	21
University of Buffalo	3	0	1
University of California, Berkeley	33	0	0[1]
University of California, Los Angeles	6	0	20
University of Chicago	3	0	0[1]
University of Hawaii	0	0	5
University of Michigan	3	0	31
University of Minnesota	378	0	..[2]
University of North Carolina[4]	0	0	0

[1] Certificates not granted but course meets in full N.O.P.H.N. requirements for accreditation
[2] Information not available
[3] Information not given
[4] Newly approved in 1942

(*Continued*)

TABLE 5 (Cont.)

Name of University	Number of Students Receiving Each Degree and Certificate: Baccalaureate Degrees	Masters Degrees	Certificates
University of Oregon	8	0	36
University of Pittsburgh [4]	1	0	0
University of Washington	7	3	33
University of Wisconsin	3	0	0[1]
Vanderbilt University	2	0	17
Wayne University	1	0	23
Western Reserve University	4	3	51
Totals	542	22	482

[1] Certificates not granted but course meets in full N.O.P.H.N. requirements for accreditation
[4] Newly approved in 1942

Summary of Degrees and Certificates Awarded to Nurses in 1941 and 1942

TABLE 6

	1941–1942	1940–1941
Baccalaureate degrees granted	542	339
Masters degrees granted	22	42
Certificates granted	482	568

General Summary Table of Degrees and Certificates Granted in All Schools Covered in This Report During the Academic Year 1941–1942

TABLE 7

Doctor of Public Health	11
Doctor of Public Health (Engineering)	1
Doctor of Science	14
Doctor of Science (Engineering)	3
Doctor of Philosophy	8
Doctor of Philosophy (Engineering)	1
Doctor of Engineering	2
Master of Public Health	139
Master of Public Health (Engineering)	12
Master of Science in Public Health	71
Master of Science in Public Health (Engineering)	2
Master of Science in Public Health Engineering	2
Master of Science in Sanitary Engineering	4
Master of Science in Civil Engineering	2
Master of Science in Engineering	1
Master of Science	4
Master of Science (Engineering)	24
Master of Civil Engineering	6
Master of Arts	1
Master of Arts in Science	3
Masters Degrees (Nurses)	22
Baccalaureate Degrees (Nurses)	542
Diploma in Public Health	19
Certificate in Public Health	2
Certificate in Public Health (Engineering)	2
Certificates (Nurses)	482
Engineering, Science and Management Defense Training Certificate	24
Total	1,404

W. P. SHEPARD, M.D., *Chairman*

Effect of Aluminum Hydroxide Sedimentation, Sand Filtration and Chlorination on the Virus of Poliomyelitis*

J. EMERSON KEMPF, M.D., MARTHA G. WILSON, MARJORIE E. PIERCE, AND MALCOLM H. SOULE, Sc.D., F.A.P.H.A.

Hygienic Laboratory, University of Michigan, Ann Arbor, Mich.

IT has been well established that the virus of poliomyelitis occurs in the feces of patients with this disease and of healthy contacts, and in sewage. Since the pollution of water with this virus is thus possible, and since aluminum hydroxide sedimentation, sand filtration, and chlorination are extensively used in water purification procedures, it seemed advisable to determine whether treatment by these methods inactivated or removed the virus.

ALUMINUM HYDROXIDE SEDIMENTATION AND SAND FILTRATION

In experiments on the effect of aluminum hydroxide sedimentation and sand filtration, the DG strain of virus, isolated from the stool of a poliomyelitis patient by Dr. S. D. Kramer, was used. This strain had a minimal infective dose of approximately 0.00002 gm. of monkey passage spinal cord at the beginning of these experiments, which increased in the course of this study to 0.001 gm. A sand filter for laboratory use was constructed according to a modified plan of Baylis.† [1] This filter consisted of a glass tube 5′ long and 2″ in diameter, which was supported in a vertical position, and contained 1′ of washed coarse gravel at the bottom of the tube, above which was layered 2′ of Ottawa silica sand, of which 10 per cent passed a sieve of 0.508 mm. pore size and 60 per cent passed a sieve of 0.630 mm.; the uniformity coefficient (60 per cent divided by 10 per cent) was 1.24. The 2′ space above the sand was filled with water. The tube was fitted with a glass stopcock at the bottom, and a support above the filter held a bottle, from which water could be siphoned into the top of the tube. Before using, the apparatus was filled with chlorinated water and allowed to stand for at least 12 hrs. It was then drained, and backwashed with distilled water until the overflow water was clear and contained no residual chlorine.

In a preliminary experiment the filter was tested for its ability to remove *Escherichia coli* from water which had been previously treated with aluminum sulfate and allowed to settle. Three one gallon bottles were filled with water and enough of a 4 to 6 hour broth culture of *E. coli* was added to each to produce a final concentration of ap-

* This work was aided by a grant from the Clara Ward Seabury Clinic for the Study of Infantile Paralysis.

† The plan was submitted by H. A. Faber, the Chlorine Institute, Inc., New York, N. Y.

TABLE 1

The Effect of Aluminum Hydroxide Sedimentation and Sand Filtration on the Removal of Poliomyelitis Virus from Infected Water

Experiment No.	Aluminum Sulfate in Grains per Gallon	pH	Poliomyelitis in Monkeys Inoculated with: Sedimented and Filtered Water	Supernatant of Sedimented Water	Control
1	24	7.1	1/2	0/1	1/1
2	8	7.8	0/2	0/2	1/1
3	8	7.6	1/2	1/1	1/1

proximately 50,000 organisms per ml. Eight grains of aluminum sulfate * were added to each bottle, and the contents stirred rapidly for 1 min., then slowly for 9 min. The resultant floc was allowed to settle for 3½ hrs., at which time each bottle's contents was filtered, allowing sufficient floc to enter the filtering system to form a layer over the sand 2–3 mm. thick. The rate of filtering was adjusted to 2 gal. per sq. ft. per min. in order to approximate that used in municipal water purification plants.[2] An agar plate culture of the effluent was made after two-thirds of the contents of the third bottle was filtered. Since this method removed 99.6 per cent of the *E. coli,* it was considered satisfactory.

The same technic was then used for testing the effect of aluminum sulfate treatment and filtration on the removal of poliomyelitis virus from river water. The pH of the water was adjusted to 7.0 to 8.0, the water autoclaved, and to each of three gallon samples was added infected monkey cord to produce a final concentration of 0.001 gm. of cord per ml. One ml. samples of the supernatant of the aluminum sulfate treated water and the filter effluent were inoculated intracranially into monkeys, and a control suspension containing 0.001 gm. of monkey cord was likewise inoculated. The monkeys were observed for approximately 40 days, when they were killed, and the central nervous system examined microscopically for evidence of poliomyelitis. No monkey was considered to have poliomyelitis unless characteristic lesions were observed microscopically, even though the animal had shown suspicious neurological signs.

In Experiment 1 (Table 1), virus was not detected in the unfiltered supernatant fluid of the aluminum sulfate treated water, but was demonstrated in the filter effluent. In Experiment 2, no virus was found in either the supernatant or the effluent. In Experiment 3, virus was detected in both. It is thus apparent that virus was not consistently removed from the supernatant fluid by the settling of the aluminum hydroxide alone, nor was the virus removed in two out of three experiments by a combination of the aluminum sulfate treatment and filtration.

In the usual water purification plant procedure, no exact measurement of the concentration of aluminum hydroxide is made following the addition of sufficient aluminum sulfate to form an optimum floc. It was noted in our work that there was a marked difference in the amount of sediment formed when a selected amount of aluminum sulfate was added to a volume of water, depending on whether the sample was river water or distilled water, and also on other factors, such as pH and the rate of adding the aluminum sulfate to the water. Because of these differences

* One grain was contained in 1 ml. of a stock suspension of 17.12 grams of aluminum sulfate per liter.

the following procedure * was used to measure exactly the amount of sediment formed. A 10 ml. sample of water in which a floc had formed was placed in a Hopkins tube and centrifuged at 500 times gravity for 10 min. The volume of sediment was then measured.

In testing certain samples of artificially contaminated water, it was noted that occasionally virus was found in the resuspended sediment when none was found in the supernatant or in the control suspensions. This actual concentration by aluminum hydroxide was noted by Schaeffer and Brebner.[3] In our experiments, aluminum hydroxide sediments were produced in samples of water to which virus had been added, and monkeys were inoculated with suspensions of the resuspended sediment as well as with the supernatant fluid. Monkeys were also injected with samples of the inoculated water to which no aluminum sulfate had been added. Only monkeys inoculated with the resuspended sediment from the water containing 0.56 ml. per l. developed poliomyelitis, as evidenced by paralysis and histological examination of the spinal cords (Table 4, Experiments 6 and 7).

TABLE 2

Concentration of Aluminum Hydroxide Sediment Necessary to Remove Poliomyelitis Virus from Inoculated Water

Experiment No.	pH	Aluminum Sulfate in Grains per Gallon	Concentration of Sediment in ml./liter	Poliomyelitis in Monkeys Inoculated with: Supernatant of Sedimented Water	Poliomyelitis in Monkeys Inoculated with: Control
4	7.3	8	0.60	2/2	0/1
	6.9	16	1.16	0/2	0/1
	6.7	32	2.20	0/2	0/1
5	7.0	8	0.40	1/2	2/2
	6.9	16	1.03	1/2	2/2
	6.7	32	1.50	0/2	2/2

The concentration of precipitate present when virus was removed from artificially contaminated water was next determined. It was found in Experiments 4 and 5 (Table 2) that virus was not removed from the water when the amount of aluminum sulfate added resulted in a volume of 0.60 or 1.03 ml. of sediment per liter. Volumes of 1.16 and 1.50 ml. per l. were adequate to produce non-infective inoculums. These amounts of precipitate were compared with the amounts in samples of water obtained from the flocculating basins of four water purification plants in Southern Michigan. In each of three of these samples (Table 3), the concentration was less than 1.16 ml. per l., which was the quantity required to remove the virus from artificially infected water. In the water from one plant, 8 ml. per l. was found, which according to these experiments was more than adequate to sediment the virus.

TABLE 3

Concentration of Aluminum Hydroxide Sediment Found in Samples of Water from Purification Plants

Plant Number	pH	Concentration of Coagulant Added in p.p.m.	Concentration of Sediment in ml./liter
1	7.5	15.2	0.26
2	7.4	12.0	0.14
3	8.9	42.0	8.00
4	7.5	9.3	0.20

* This method was suggested by Dr. W. J. Nungester, University of Michigan Hygienic Laboratory.

TABLE 4

Concentration of Poliomyelitis Virus by Means of Aluminum Hydroxide Sedimentation

Experiment No.	Concentration of Sediment in ml/liter	Poliomyelitis in Monkeys Inoculated with		
		Supernatant of Sedimented Water	Resuspended Sediment	Control Suspension
6	0.56	0/2		
	1.02	0/2	1/1	0/2
7	0.56	0/2		
	1.20	0/2	1/1	0/2

THE EFFECT OF CHLORINATION ON THE POLIOMYELITIS VIRUS

In a previous publication [4] it was demonstrated that 1.50 p.p.m. of chlorine in the form of chloramine inactivated in 20 min. a suspension of spinal cord infected with MV virus, but that 0.86 and 1.00 p.p.m. for 20 min. failed to inactivate. The virus remained viable after exposure for 1 hr. to 0.90 p.p.m., and even after 4 hrs. exposure to a chlorine concentration of 0.2 p.p.m. These studies were continued to determine the concentration of chlorine required to inactivate 2 strains of virus in the time of chlorine exposure used in the average chlorination plant.

In further experiments on the effect of chlorination the MV and DG strains were used, with minimal infective doses of approximately 0.001 and 0.0001 gm., respectively, of infected spinal cord. Because of expense, and the unreliability of tests in monkeys of the minimum dose to produce paralysis, these doses were not accurately determined.

In Experiment 8 (Table 5) river water was used, and the source of chlorine was sodium or calcium hypochlorite. The chlorine content of the water was determined by the orthotolidine and starch-iodide methods. Approximately 0.70 ml. of a 1:10 suspension of spinal cord infected with the MV strain was added to each of several 100 ml. samples of water and various amounts of chlorine were then added. These were allowed to stand for 20–25 min., at which time chlorine determinations were made and 1.00 ml. of each specimen was inoculated intracranially into a monkey. Failure of the chlorine to inactivate the virus was evidenced by the subsequent development of paralysis in the monkeys with histopathology compatible with that of acute poliomyelitis. Inactivation of the virus was determined by absence of paralysis or tremors in the surviving animals, which were exercised daily during the 40 day period of observation. One and five-tenths p.p.m. of chlorine inactivated the virus and 1.00 p.p.m. was the maximum concentration tested which failed to inactivate the virus.

TABLE 5

Effect of 25 Minutes Exposure to Chlorine on MV Virus

Chlorine in p.p.m.			
O-tol *	SI †	pH	Effect on Virus
0.20	0.70	7.0	Not inactivated
0.60	0.40	7.3	" "
0.85	....	8.2	" "
1.00	....	8.3	" "
0.55	1.50	7.0	Inactivated
1.50	....	8.2	Inactivated

* Chlorine content determined by orthotolidine method.

† Chlorine content determined by starch-iodide method.

In Experiment 9 (Table 6) tap water was used and the effect of chlorine gas dissolved in water on the DG strain of virus was tested. The chlorine content of the water was determined by the starch-iodide test only, because of color interference encountered in the orthotolidine reaction. The rest of the technic was that of Experiment 8. It was found that the amounts of chlorine

required to inactivate the DG strain did not differ markedly from that required to inactivate the MV strain. One p.p.m. inactivated the virus, while 0.90 p.p.m. just failed to inactivate.

TABLE 6

Effect of 25 Minutes Exposure to Chlorine on DG Virus

*Chlorine in p.p.m.**	*pH*	*Effect on Virus*
0.45	7.1	Not inactivated
0.50	7.1	Inactivated
0.90	8.0	Not inactivated
1.00	7.1	Inactivated
1.60	7.1	"
1.90	8.0	"

* Chlorine content determined by starch-iodide method.

SUMMARY

Experiments on the effect of aluminum hydroxide sedimentation and sand filtration, and further studies of chlorination on the poliomyelitis virus are described. The virus was not removed from water by aluminum hydroxide sedimentation and filtration methods which removed 99.6 per cent of *E. coli*. Virus was removed from an artificially inoculated water by producing an aluminum hydroxide sediment of 1.50 ml. per l. The virus was not inactivated by this procedure, however, but remained in an increased concentration in the sediment. Samples from three of four water purification plants selected at random did not contain a sufficiently high concentration of aluminum hydroxide to sediment the poliomyelitis virus.

The concentration of chlorine which inactivated the MV strain was 1.50 p.p.m. for 25 min.; while the DG strain was inactivated by 1.00 p.p.m. but not by 0.90 p.p.m. for 25 min. These concentrations of chlorine are in excess of those recommended for the production of bacteriologically safe drinking or swimming pool water.

REFERENCES

1. Baylis, J. R. *J. Am. Water Works A.*, 29:1010, 1937.
2. Hudson, H. E., Jr. *J. Am. Water Works A.*, 30:1992, 1938.
3. Schaeffer, M., and Brebner, W. B. *Arch. Path.*, 15:221, 1933.
4. Kempf, J. E., and Soule, M. H. *Proc. Soc. Exper. Biol. & Med.*, 44:431, 1940.

Surveys of the Nutrition of Populations*

Description of the Population, General Methods and Procedures, and the Findings in Respect to the Energy Principle (Calories) in a Rural Population in Middle Tennessee

JOHN B. YOUMANS, E. WHITE PATTON, AND RUTH KERN

Department of Medicine and the Department of Biochemistry, Vanderbilt University, Nashville, Tenn.

THE growing appreciation of the importance of nutrition and the realization that mild nutritional deficiency states are frequent in the general population have made nutrition an important concern to public health services. At the same time the development of improved procedures for the detection of nutritional deficiencies in their earlier and milder forms, before the development of obvious lesions, has suggested that methods might be developed for use by public health agencies to detect these deficiencies and make surveys of nutrition of populations as in the epidemiological investigation of other diseases. Such studies would, of course, provide the information and background necessary for the prevention and cure of such important disorders. With this thought in mind we have made a survey of the nutrition of a population with the purpose of developing methods suitable for public health use, demonstrating their effectiveness and securing information as to the nutrition of the group selected.

Surveys of nutrition are of various kinds and can be made in different ways depending on the purpose of the survey and the available facilities. At present the term is usually considered to mean a study which includes both a record of food consumption and an assessment of the state of nutrition of the individual subjects.

Studies of food consumption have long been used as a method of measuring the nutrition of populations. Such studies have yielded very valuable information but the method is indirect and relatively inaccurate. It determines the state of nutrition by an inference; the subject is found to eat so much of this and that food containing certain amounts of the different nutritive factors, therefore his nutritive state is judged to be thus and so. At the present time this method is insufficient by itself. It was used in the past mainly because satisfactory methods for assessing the state of nutrition by physical examination or laboratory tests were lacking. Such methods have however been devised and improved so that now they offer the possibility of determining the actual state of nutrition by direct and objective methods. The study of food consumption, however, remains an important part of a survey of nutrition because of its function in determining the etiology and epidemiology of dietary deficiencies. Furthermore, for the present it offers a check and control of other methods of assessing nutrition, an im-

* The studies referred to herein were conducted under the auspices of the International Health Division of the Rockefeller Foundation of New York City by the Nutrition Unit of the Departments of Medicine and Biochemistry of the Vanderbilt University School of Medicine, Nashville, Tenn.

portant function in the period of trial of new, direct, and objective tests. For these reasons a complete survey of nutrition, one that includes both a study of diets and an assessment by examination and laboratory tests, is desirable. The scope and thoroughness of these two procedures will vary with the needs and purpose of the survey and the facilities that are available for it.

For our purposes the complete survey was employed. The area selected was a portion of Wilson County, Tenn., about 15 miles from Nashville. It was chosen as a representative area* of Middle Tennessee, predominately rural, but containing a village community with a limited number of tradesmen, professional people, and skilled workers. A number of the inhabitants worked at a nearby rayon plant, driving to and from their work.

Topographically, the country is rolling and borders on the Cumberland River. The soil is predominately a clay of limestone origin, rather shallow but much of it good. Areas of poorer soil and, in particular, rocky cedar glades are interspersed among areas of the better soil. The type of agriculture is general, diversified farming. County and home demonstration agents and similar organizations are present.

Among the reasons for the selection of the area aside from its suitability as a representative area were its distance from Nashville which facilitated the work of the survey, the existence of an active full-time county health service, and a community spirit which promised a satisfactory coöperation in the study.

If it be objected that this in itself may have affected the representative average character of the area it may be said that such a spirit was by no means unanimous and that the existence of a considerable amount of civic interest and activity together with a significant lack of it in some groups are characteristic of the region.

Considerable effort was made to explain the proposed survey to the people and secure their coöperation. Visits were made to meetings of civic clubs, women's clubs, parent-teacher associations, the Grange, the schools, and similar organizations. Key persons in the community, teachers, leading farmers, civic leaders, and others were called upon, the procedure was explained, and their coöperation and help were solicited. Help was obtained from the county health officer who offered his assistance and that of his staff in sponsoring and explaining the procedure, and provided an introduction to many elements of the community. In particular, each doctor in the vicinity was visited, not only those actually living in the area but also those who might have patients in the area. All participation by the subjects was voluntary and unremunerated. It may be of interest that it was solicited on the basis of a contribution to public health, to science, and to humanity generally rather than of benefits that might be received by the subjects.

The actual survey consisted of a record and study of food consumption on both a household and individual basis, a medical history, physical examination, and various laboratory tests. Only part of the details of these procedures will be presented here; complete details for each of the nutritive factors investigated will be given with the reports of the study of each of those factors. The present report deals with the characteristics of the area and the population, the general procedures employed, and the state of nutrition in respect to the energy factor (calories).

* The area originally selected was larger and contained about 2,500 inhabitants. It was thought that only about 60 per cent of the inhabitants would coöperate in the study, giving some 1,200 subjects, the number desired. Preliminary experience, however, indicated that about 90 per cent would coöperate, and consequently the size of the area was reduced to that shown, with a population of about 1,300.

GENERAL PROCEDURES

The study and record of the food consumption were made by and under the direction of one of us (R.K.). The general procedure followed is described below and will apply to subsequent reports, but the variations, special procedures, and methods used for the study of each of the particular dietary factors except calories will be described in the respective reports.

After preliminary visits to secure cooperation, to explain the procedures, and to make necessary arrangements, a group of households* was selected containing such number of individuals and located so that it could be managed by a single field worker with time for one visit daily to each family during the period of study.

The day before starting the record of food consumption the household was again visited and a roster was prepared, each individual receiving a household number and an individual number. Date of birth, length of time in the household, and occupation of each were obtained and the earnings of each and of the household as a whole were ascertained and recorded. The member or members of the family who were to keep the records were instructed in the procedure and the forms to be used. They were told that the investigators would return the next morning to help them with details of weighing and measuring, and not much stress was laid on these matters at this visit. The responsible member or members of the household were instructed in the recording of food purchased, produced at home, and received as gifts. In some instances the household inventory of food was made at this time. In other cases this was done the following day. Every effort was made to prevent any changes in the food habits, and the subjects were informed that a second examination would be made in the following fall or spring.

Some time after the food consumption was studied and recorded, within two weeks in the majority of cases, the medical history was obtained and the physical examination and laboratory tests were made.† For this purpose the subjects were visited in their homes or were brought to the schools of the district or to Vanderbilt Hospital. When examined away from home appointments were made by the field workers, usually at their last visit, and transportation was arranged. For the most part the attendance for examination was easily managed at the first trial but because of conflict with their occupations, particularly with farmers, it was sometimes necessary to arrange more than one appointment and with a small percentage of "stragglers" several attempts were necessary before the examination was completed.

Because it was necessary for the adaptometer (photometer) test, and preferable for the x-ray studies that the patients come to the hospital, many of the subjects, particularly the adults, were examined there. However, examining rooms and facilities for obtaining blood and other material for laboratory tests were set up at the consolidated school which accommodated all the white children in the area. Many of the white children were examined and had specimens obtained there. Similar arrangements were made at the smaller schools for Negroes. Such subjects came to the hospital for the x-rays and adaptometer tests at a later time.

METHODS

On the first day of the record period (7 days), the field worker called and the record as prepared to that point was

* Household is used in place of family because the unit of study included not only members of a family but all others for whom it was the principal source of meals.

† In a few instances the examination and laboratory tests were made first and the diet record obtained afterward.

reviewed. Measurement was stressed and the use of cups and spoons as well as the classification of fruits and vegetables into large, medium, and small, or by diameter or length, was made clear, often with a practical demonstration. Recipes for mixed dishes, the methods of recording amounts of various ingredients and the type of cooking used for various foods and dishes were discussed. Additional information and instructions were given and any mistakes corrected. Similar visits were made on the succeeding days of the period and sometimes several daily visits were made. If necessary the investigator went to the home at each meal and recorded the food eaten but this was rarely necessary. At the last visit appointments were made for the medical examination, instructions were given for the collection of urine specimens and similar procedures, and transportation arranged.

For the household inventory and purchase record all the food in the house was weighed, measured, and counted at the start of the seven day period, by a member of the family and the field worker. Weights of loose food were checked and packaged food inspected for net weight and losses. Because most of the subjects were farmers there were often large amounts of potential food available—eggs, hams, truck gardens, etc., but this was not included unless it was present and available at the start of the recording period for early consumption. Forms were provided on which food purchased, received as gifts, or produced at home (garden truck, eggs, milk, etc.) were recorded. At the end of the period another similar inventory was made.

For determining the food consumption of the individual the food actually eaten each day was recorded either by the individual himself or by some member of the household for three days during the week. For many of the subjects these were non-consecutive days and every effort was made to avoid periods containing unusual days. Food eaten away from home and quasi-food such as candy, soft drinks, and alcoholic beverages were included. The intake of breast milk was noted but the milk was not analyzed nor the amount measured.

The quantity of food was measured as it was eaten from the plate either cooked or as otherwise prepared for eating. Measurement was by household measures using standard cups for such foods as cereals, various vegetables, soups, milk, etc. Smaller amounts were measured by the tablespoon and teaspoon with level measure. Volume and weight of such common household measures were checked by actual testing. The amount of such foods as breads, cake, meat, biscuits, etc., was determined by three dimension measurements and reference to a prepared table for the weight of various sized portions. Fruits and vegetables commonly eaten in the whole state, cooked or raw, such as bananas, whole potatoes, apples, and the like were designated as large, small, or medium according to standard practice with the food tables employed. Kitchen waste (except losses in cooking) was not a factor and table waste was controlled closely by recording only food eaten in so far as possible. The general table waste was a minor feature in this study.

Individual recipes were obtained for nearly every composite dish. For example, more than twenty recipes for pies were used in the calculation of dietary intake and four or five recipes for slaw. Proper allowances for changes in weight and volume caused by heat, dilution with water, and other procedures of preparation and cooking were made according to the type of cooking used, following standard practices.

For the calculation of the dietary intake various standard tables of food values were used as far as possible. The

tables used were as follows: For calories, carbohydrate, protein, fat, included in the present report, Tables XIV, XVIII, and XIX of *A Laboratory Handbook for Dietetics*, by Mary Davies (Swartz) Rose,[1] supplemented when necessary by values from *The Fundamentals of Nutrition*, by Hawley and Maurer-Mast,[2] the *Farmers' Bulletin*, "Rabbit Raising," U. S. Department of Agriculture,[3] and *The Structure and Composition of Foods*, by Winton and Winton.[4] Details of the sources of food values for other specific nutrients will be given with the respective reports on those factors. Analyses by the respective companies or general commercial recipes were used for commercial candy bars, cakes, cookies, and similar foodstuffs. Finally, in a few instances, when reported analyses were not available, values were assigned arbitrarily on the basis of general knowledge, similarity to other food, etc. All of these values were combined into "working tables"* where the various sources are indicated and where household measures are reduced to standard weights and sizes. Here also are the various recipes, notes, and similar data.

When necessary, adjustments were made for the seasons according to the tables. Vitamin values refer to raw weight corrected for vitamin losses in cooking and the weights of vegetables refer to cooked or raw weight depending on the form in which they were eaten.

Both history and physical examination were done by physicians with special training in nutrition, and, for children under 4 years, were done by a pediatrician. Special attention, naturally, was paid to the symptoms and signs of nutritional deficiencies, particularly to those of the early or mild deficiencies and to diet and habits of eating.

Definitions and descriptions of the details of the history and physical examination in respect to the individual nutritive factors will be given with the reports dealing with each factor. The present report deals with the energy principle (calories) and the features noted in the history and examination with respect to energy nutrition were as follows: In the *history*, a past tendency to overweight or underweight, a history of recent abnormal increases or decreases in weight, the number of meals eaten daily, the consumption of alcoholic beverages, and the general characteristic of the diet. In the *physical examination*, the state of subcutaneous tissue and musculature and, classed with either the physical examination or the *laboratory*, the height and weight.

The history of past obesity or leanness, recent changes in weight, and habits regarding meals and eating was obtained by the clinician at the time of the examination and the findings in these respects are an evaluation by him of the responses of the subject to his inquiry. The state of the musculature and subcutaneous tissue represents also the examiner's judgment and was based only on a rough quantitative or attempted quantitative measurement by simple inspection and palpation. It was felt, that in view of the unsuitability and unreliability of the objective quantitative measurements which have so far been devised for this purpose, equally satisfactory results would be obtained by taking the examiner's opinion to be based on a number of related observations, such as elasticity of the skin, constitutional type, age of the subject, etc.

Weight was measured on standard platform scales, without coat or shoes and recorded to the nearest quarter pound except for children under one year old. The latter subjects were weighed on a balance scale to the nearest quarter pound. The standards for

* Copies of these tables are much too lengthy for publication with these reports. They can be furnished by special arrangement by writing to the authors, as may copies of record forms used.

weight used were those which allow for weight of clothes and although there was some variation with season this was not great.

Height was measured with a steel measuring rod attached to the scale, with the subject bareheaded, standing to attention and in stocking feet. It was recorded to the nearest quarter inch. Length rather than height was measured in young children. For standards of weight according to height, age and sex, the tables of Baldwin and Wood[5] have been used.

The method of obtaining the socio-economic data and the classifications and definitions used in this part of the study require little comment. Dependent members of the household have been assigned to the income group of the household as have independent members. The latter had their own income determined separately, but in determining household income it has been included in the household income because it is the latter which determines the character of the dietary. It was considered that income of the individual member, if used in part to pay for board in the family merely served to increase the income level of the family unit as related to *food* supply. Income has been calculated to include only actual cash income. Additional income in the form of food has been considered separately under the heading of home food supply.

Relief status was ascertained by direct inquiry and by reference to official rolls if necessary. The number on relief was very small and included mainly those receiving old age pensions. When relief was given the amount, in cash or in kind, was indicated.

For the purpose of analysis the data obtained were coded and transferred to punch cards. In future studies the use of the code or a similar one will make it possible to analyze the data and secure the results of a survey in a very short time after the data have been collected.

RESULTS *

The inhabitants of the area at the beginning of the study numbered 1,272 individuals, included in 311 households. Of these, 26 households with 86 individuals refused entirely to coöperate in the study, leaving 1,186 individuals in 286 households who began the study. Of this number 34 individuals subsequently failed to complete their diet study, either because they refused to continue further, because they moved away, or were too ill to continue. Thus of a total of 1,272 inhabitants 1,152, or 91 per cent, completed the dietary part of the first period of the survey. At the first examination 58 individuals (50 white and 8 colored) failed to be examined and have the laboratory tests, for reasons listed above, leaving 1,094, or 85 per cent, of the total population who completed the study in the first period.† In addition 5 subjects were examined who did not complete the individual dietary study.

Over 90 per cent of the subjects had their *first* examination in the late summer and the fall, the remainder in the late winter and spring.

The distribution of the subjects according to age,‡ sex, and race is shown in Table 1. The proportion of Negroes to whites is slightly higher than the average for the region which is approximately 25 per cent.

The distribution of white and colored households according to annual cash income is shown in Table 2. Among the whites there is a fairly equal distribution among the various income levels but among the Negroes few had an an-

* The results of the first examination only are given here. Comparison of the results of the summer-fall and winter-spring examinations will be reported later.

† This total number does not apply to all the items of the examination. In some cases, as with young children, certain examinations were of necessity omitted and occasionally a determination or a part of the examination was missed.

‡ Determined to the nearest birthday except for those one year old and under whose age is determined to the nearest month.

TABLE 1

Distribution of the Subjects According to Age, Sex, and Race

Age	White		Colored		Total
	Male	Female	Male	Female	
Less than 3 months	2	0	5	3	10
3- 6 months	3	2	2	1	8
7-11 "	2	2	2	1	7
1 year	4	5	3	6	18
2 years	8	10	7	6	31
3 "	4	10	8	4	26
4- 6 years	26	22	11	13	72
7- 9 "	35	31	21	5	92
10-12 "	26	25	17	14	82
13-15 "	21	19	15	15	70
16-19 "	30	27	15	22	94
20 "	10	6	7	2	25
21-29 "	46	56	29	25	156
30-39 "	64	66	20	23	173
40-49 "	42	41	15	16	114
50-59 "	41	40	15	15	111
60-69 "	22	16	11	11	60
70-79 "	11	7	4	4	26
80-89 "	2	3	4	1	10
90-99 "	0	0	0	1	1
Total	399	388	211	188	1,186

TABLE 2

Distribution of Households According to Income

Income	White		Colored	
Dollars	Number	Per cent	Number	Per cent
Less than 500	42	21.4	46	51.1
500- 999	32	16.3	35	38.7
1,000-1,499	44	22.4	5	5.5
1,500-1,999	34	17.3	2	2.2
2,000+	40	20.4	00	0.0
Unknown	3	1.5	3	3.3
Total	195		91	

nual income over $1,000. Over half had an income less than $500. Only 6 colored households, composed of 26 individuals, and 1 white household of 2 persons, were "on relief." In 5 of the colored households the relief consisted of an old age pension, $2 to $10 per month. Its nature in the 6th is unknown. For the single white household direct relief was received in the form of $2 weekly for groceries.

The "size" of the households, which may be an important factor in the nutrition of the members is shown in Table 2-a. Little difference is found between white and colored, though the latter households were slightly larger on the average.

TABLE 2A

Size of Households *

White and Colored Households Listed According to the Number of Individuals Composing the Household

Number of Individuals in Household	Number of Households	
	White	Colored
1	7	7
2	36	24
3	37	10
4	43	9
5	32	14
6	17	8
7	11	6
8	7	5
9	3	5
10	0	1
11	0	1
12	1	1

* Because of a few instances of improper classifications of households for size, total subjects computed from this table differ slightly from the actual number.

TABLE 3

Relation of Home Food Supply to Variation in Cash Income

Income Group	*Home Food Supply*				
Dollars	*None*	*Slight Amount*	*Moderate Amount*	*Large Amount*	*Total*
			No. of Subjects		
			White		
Less than 500	8	50	58	29	145
500– 999	14	29	45	45	133
1,000–1,499	3	20	58	77	158
1,500–1,999	28	27	32	46	133
More than 2,000	15	29	39	96	179
Total	68	155	232	293	748
			Colored		
Less than 500	30	60	39	29	158
500– 999	34	80	24	41	179
1,000–1,499	6	17	12	0	35
1,500–1,999	0	3	0	12	15
More than 2,000	0	0	0	0	0
Total	70	160	75	82	387

The status of the households with regard to home food supply is shown in Table 3. Slight amount means a poor, seasonal garden, with or without a few chickens but no hogs, cows, or other livestock. Moderate amount includes one cow per household and a garden estimated to furnish about half a reasonable supply of vegetables. Large amount is anything over the latter. There is noted a tendency for the home food supply to increase with the increasing cash income, those with the highest cash income tending to have the best home food supply. Those most in need seem to have had the least. This tendency was nearly lacking in the Negroes, perhaps because of the concentration of households in the two lowest income groups.

The status with respect to occupation is given in Table 4. Totals do not correspond to the total number of subjects because some have been listed under more than one occupation. School children form the largest group in both white and colored, with housewife and agricultural worker next in each group respectively. Percentages are very much the same in white and colored. However, in the other classifications a considerable difference between white and

TABLE 4

Distribution of Subjects According to Occupation *

Occupation	*White*		*Colored*	
	Number	*Per cent*	*Number*	*Per cent*
Schoolchild	208	27.2	95	25.0
Housewife	193	25.3	93	24.5
Agricultural Worker	134	17.6	72	18.9
Preschool child	84	9.6	57	12.6
Manufacturing	48	6.3	10	2.6
Professional	33	4.3	2	0.5
None	23	3.0	17	4.5
Tradesman	20	2.6	4	1.1
Transportation	7	0.9	1	0.3
Other	36	5.1	42	11.0
Unknown	15	1.9	6	1.6
Total	801		399	

* Totals do not correspond to total subjects because some subjects have been listed under two or more occupations.

TABLE 5

Education Attained at Time of Examination

Age	*Less than 3rd Grade*	*3–5 Grade*	*6–8 Grade*	*9–10 Grade*	*11–12 Grade*	*Attended College*	*No Education*	*Unknown*	*Total*
				White					
1– 3	0	0	0	0	0	0	31	10	41
4– 6	5	0	0	0	0	0	34	9	48
7– 9	32	26	0	0	0	0	1	7	66
10–12	3	28	14	0	0	0	1	5	51
13–15	0	4	20	12	0	0	0	4	40
16–20	0	3	14	15	24	7	0	10	73
21+ (Men)	5	23	67	16	55	14	6	42	228
21+ (Women)	4	18	52	25	68	30	2	30	229
Total	49	102	167	68	147	51	75	101	776
				Colored					
1– 3	0	0	0	0	0	0	34	0	34
4– 6	8	1	0	0	0	0	14	1	24
7– 9	19	5	0	0	0	0	0	2	26
10–12	4	22	4	0	0	0	0	1	31
13–15	0	9	18	1	0	0	0	2	30
16–20	0	4	37	3	0	0	0	2	46
21+ (Men)	8	34	28	3	1	0	18	6	98
21+ (Women)	4	36	39	5	0	1	3	8	96
Total	43	111	126	12	1	1	69	20	385

colored is found, with relatively much smaller numbers of colored in manufacturing, professional, and tradesman classifications and more in the varied occupations classified as "other," house servants for example. There is slightly greater percentage of colored with "no occupation." The larger percentage of preschool children among the Negroes probably reflects the later age of starting school.

The educational status of the subjects is given in Table 5. The table is somewhat obscure because there is no clear indication in the table whether schooling is continuing or not, and in certain age groups the education stated may not be the final amount expected. A finding of interest is that among the Negroes the accomplishment, in the sense of attendance, up through the 6th–8th grade is the same as for the whites. In fact, the percentage is somewhat greater, 40 and 36 per cent. The break at this point coincides with the lack of facilities beyond this educational level. The nearest high school for Negroes was at Nashville, about 15 miles away. Thus, as far as the opportunity was available, the education of the Negroes seems equal to that of the whites in grades attended.

NOTE: The second section of this paper will appear in this *Journal* at an early date.

REFERENCES

1. Rose, Mary Davies (Swartz). *A Laboratory Handbook for Dietetics.* Macmillan, 1937.
2. Hawley, Estelle E., and Maurer-Mast, Esther E. *The Fundamentals of Nutrition.* Thomas, 1940.
3. *Farmer's Bulletin:* 1090, Rabbit Raising. U. S. Dept. of Agriculture, Supt. of Documents, Gov. Ptg. Office, Washington, D. C.
4. Winton, A. L., and Winton, K. G. *The Structure and Composition of Foods.* Wiley, 1932.
5. Baldwin, Bird T., and Wood, Thomas D. *Weight-Height-Age Tables.* Am. Child Health Association.

Effect of Prolonged Storage on the Antigenicity of Chloroform-Inactivated Canine Rabies Vaccine*

CHARLES N. LEACH, M.D., F.A.P.H.A., AND
HARALD N. JOHNSON, M.D.
State Board of Health, Montgomery, Ala.

IN the course of previous tests of the antigenicity of chloroform-inactivated canine rabies vaccine it was clearly demonstrated that a single 5 ml. dose, administered subcutaneously, afforded dogs a high degree of resistance to experimental intramuscular inoculation of rabies street virus.[1]

Having thus obtained evidence that dogs can be immunized with rabies vaccine containing no demonstrable virus it was considered important to determine the effect of prolonged storage at refrigerator temperature (5° C.) on the antigenicity of this product. A large volume of one lot of chloroform-inactivated vaccine was obtained from a commercial source and stored at this laboratory. This was first tested in dogs 4.5 months from the date the vaccine was prepared. The same vaccine was again tested after 6 and 12 months' further storage.

MATERIALS AND METHODS

The dogs used in the three experiments had not been previously vaccinated and were purchased directly from the owners. In each of the three tests the dogs were so allotted that the average age and weight of the vaccinated and control groups were, as near as possible, the same. The majority of the dogs were between 1 and 2 years of age. In order to satisfy statistical requirements, at least 30 dogs were included in each vaccinated and control group.

The chloroform-inactivated vaccine was of ovine origin and contained 33⅓ per cent of brain material. The vaccine was produced November 13, 1940. The safety test was completed at the commercial laboratory January 27, 1941, and no live virus was demonstrated. Further tests at this laboratory likewise proved negative. The first group of dogs was vaccinated March 31, 1941, the second group, October 1, 1941, and the last group April 3, 1942. All vaccinated dogs were given a single 5 ml. dose, 2.5 ml. being injected subcutaneously on either side of the cervical spine.

The vaccinated dogs were inoculated with rabies virus 30 days after vaccination in parallel with like groups of control animals. The test virus was obtained from the brains of dogs dying of rabies after natural exposure. This brain material had been stored in pure glycerin in an ice cream hardening cabinet at —25° C. At the time of each challenge virus test an entire brain was weighed and after thorough trituration was diluted 1:10 by weight in dis-

* The studies and observations herein reported were conducted with the support and under the auspices of the International Health Division of The Rockefeller Foundation and the Alabama State Board of Health.

tilled water. The supernatant fluid after centrifugation was used as the street virus inoculum.

An injection of 0.5 ml. of the virus suspension was given into each masseter muscle of all vaccinated and control dogs. The animals were subsequently observed for a period of at least 90 days. Autopsies were performed on all dogs dying during the 90 day observation period. The brains were examined for Negri bodies and if this examination was negative, 0.03 ml. of a 10 per cent suspension of a pool of various portions of the brain was inoculated intracerebrally into each of four white mice.

EXPERIMENTAL RESULTS

The results of the three tests of the antigenicity of one lot of chloroform-inactivated rabies vaccine are set forth in Table 1. In test number one, 2 vaccinated dogs died of causes other than rabies during the 90 day period of observation. There were no incidental deaths in the control group. Two of the remaining 32 vaccinated dogs died of rabies (6 per cent), while 20 of the 36 control dogs died of the disease (56 per cent).

In test number two, 2 vaccinated dogs and 1 control dog died of causes other than rabies during the 90 day observation period. Four of the 38 remaining vaccinated dogs died of rabies (11 per cent) while 27 of 41 control dogs succumbed to the disease (66 per cent).

In test number three, 1 vaccinated and 1 control dog died of incidental disease during the experiment. Six of the 40 remaining vaccinated dogs died of rabies (15 per cent) compared with 25 rabies deaths in the group of 39 control dogs (64 per cent).

TABLE 1

Three Tests of the Antigenicity of One Lot of Commercial Chloroform-Inactivated Canine Rabies Vaccine

		Vaccinated Dogs			*Control Dogs*			
Test	*Age of Vaccine*	*Number of Dogs*	*Died of Rabies*	*Per cent Dead of Rabies*	*Number of Dogs*	*Died of Rabies*	*Per cent Dead of Rabies*	* *Statistical Significance*
I	4.5 months	32	2	6	36	20	56	0.0000
II	10.5 months	38	4	11	41	27	66	0.0000
III	16.5 months	40	6	15	39	25	64	0.0000

* By corrected χ^2 test. Likelihood of getting a difference as great or greater than that observed in the mortality of the vaccinated and the control groups by chance alone.

DISCUSSION

It is evident from the results obtained in the three tests that in each instance a high degree of protection was afforded the vaccinated dogs by a single injection of vaccine. In view of the inability to demonstrate live virus in the chloroformized vaccine by animal inoculation it is unlikely that the persistent antigenicity of this product can be explained by the presence of minimal amounts of live virus.

Although there is suggestive evidence that the antigenicity of the product was slightly reduced by prolonged storage, the difference in the results obtained in the first and third tests could be explained by chance alone. The lower mortality among vaccinated dogs in test one as compared with test three was accompanied by a proportional difference in the mortality of the two control groups. A statistical study of the three tests shows that in each instance the difference in the mortality of vaccinated and control dogs was highly significant.

The present regulations governing the marketing of canine rabies vaccine require that the date of preparation of the vaccine be noted on the product and

that the expiration date be given as one year from the date of preparation. It is evident from the results obtained in this study that the antigenicity of chloroform-treated rabies vaccine, if stored at refrigerator temperature, is well maintained for one year after production.

SUMMARY

A single lot number of commercial chloroform - inactivated canine rabies vaccine was tested in dogs 4.5, 10.5, and 16.5 months after preparation. In each test the vaccinated dogs were given a single 5 ml. subcutaneous dose of vaccine. The vaccinated dogs were inoculated intramuscularly with rabies street virus one month after the day of vaccination in parallel with like groups of control dogs. At least 30 vaccinated and 30 control dogs were used in each test. In each test the vaccinated dogs developed a highly significant degree of resistance to experimental inoculation.

REFERENCE

1. Johnson, Harald N., and Leach, Charles N. Studies on the Single Injection Method of Canine Rabies Vaccination. *A.J.P.H.*, 32, 2:176–180 (Feb.), 1942.

NOTE: The statistical analysis of the experimental results was made by Leonard V. Phelps of the Department of Vital Statistics, Alabama State Board of Health.

Highlights of the 71st Annual Meeting

A STENOTYPE report, with very little editing, is presented herewith of the Fifth General Session of the St. Louis Annual Meeting of the American Public Health Association held in the Convention Auditorium, November 30, 1942, as the final session in the meeting. This was an informal panel discussion under the auspices of the Editorial Staff of the AMERICAN JOURNAL OF PUBLIC HEALTH. Participants included Harry S. Mustard, M.D., JOURNAL Editor, Director of the DeLamar Institute of Public Health, Columbia University, New York; Leona Baumgartner, M.D., Director of the Bureau of Child Hygiene, New York City Department of Health; Martin Frobisher, Jr., D.Sc., of the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md.; Roy J. Morton, C.E., Vanderbilt University School of Medicine, Nashville, Tenn. (substituting for Arthur P. Miller, C.E., U. S. Public Health Service, New York, N. Y.); and James E. Perkins, M.D., Director, Division of Communicable Diseases, New York State Department of Health, Albany. The presiding officer was Reginald M. Atwater, M.D., Managing Editor, AMERICAN JOURNAL OF PUBLIC HEALTH, and Executive Secretary, American Public Health Association, New York.

THE CHAIRMAN: It is only natural that the emphasis so far in these meetings has been on the individual scientific sessions and on the specialties we have, as distinguished from those things which we have in common as public health workers. Here today we are bringing you an over-all view which we hope will give you some orientation on our common interests in public health. It has been thought well that the Annual Meeting should end on this comprehensive note.

It is also intended that you should see something of the way in which the editorial staff of the AMERICAN JOURNAL OF PUBLIC HEALTH approaches the matter of selecting the content of the twelve issues of the JOURNAL. We hope that the participants will hereafter be more to you than names on the JOURNAL masthead.

Let me say at the outset that it is not intended for this session to be entirely inclusive of all the highlights of the Annual Meeting. The content of the last seven days has been far too inclusive for that to be possible. Nevertheless, we shall try to make the best use of this opportunity to interpret some of the scientific sessions to those who could not attend because of other preoccupations.

The Association itself has taken some important actions in St. Louis. Steps are under way to create a new section on school health and a committee has been authorized to be charged with the job of implementing action in the whole area of school health policies and projects. Action was also taken this year to establish provisionally a section on dental health. By the time of the next Annual Meeting it seems likely that both of these sections will be ready for formal establishment, thus raising the number of sections from ten to twelve.

But now for the highlights of the program itself. Dr. Mustard, will you comment on the broad significance in Dr. Parran's address at the First General Session on Dynamic Public Health in Global War?

DR. MUSTARD: There were two things that I brought away with me from Dr. Parran's discussion which related to a

trip he recently took into Mexico and South America. One of the things which he emphasized is that South and Central America and Mexico have something to teach us. We have gone hitherto upon the more or less comfortable and perhaps not entirely justifiable assumption that the flow of knowledge and the flow of health must all be from North America southward.

I had the opportunity sometime ago to visit the Caribbean and the Central America areas as well as the northern part of South America. I was amazed there at the enthusiasm, the vigor, the ingenuity with which these people have attacked their problems. They have developed devices and procedures in malaria control, for instance, for which they need apologize to no section in the world for thoroughness of coverage and for basic scientific approach to the problem.

One other point that I should like to emphasize from Dr. Parran's talk—and this is one of which we are all more or less conscious—is that the interchange of people and goods and opinion from now on with these countries is going to be multiplied a hundredfold. When we think of the length of time that it once took, for instance, to get into some of the portions of South America as compared with the comparatively short airplane flights today, I think we can understand that there is going to be an intercontinental life and concern between the two continents that we have never approached before.

CHAIRMAN: Dr. Baumgartner, you attended the wind-up session of the Health Education Institute. Will you give us the highlights of that final session?

DR. BAUMGARTNER: I think I might say that it warmed all the cockles of an editorial heart to hear the final wind-up speech by Dr. Winslow, because it was put in those golden words in which Dr. Winslow can so well summarize a session. He summarized two full days which included the most active audience participation there has been in any Health Institute program, and he summarized those days which had been spent in talking about community organization by drawing an analogy with a political election. He said that, as far as he could discover, a political election was not won by the parades and the posters, but it was won by the ward heeler and the ward boss who went around and got the votes, and that community organization and health education were not accomplished by posters and handbills, but were achieved by sound community organization.

He made the point that the job ahead of us is going to be a more difficult one than the job behind us, because the old motivations of fear of the spread of contagious diseases, for example, were gone, and that in the job ahead of us in making a democracy work, there was going to be a great difference as to whether or not we *educate* the people or whether we *train* them. He pointed out that probably both education and training were necessary. He pointed out that you could *train* a plant, but you had to *educate* a man. In training people, you could teach them automatically to respond to external stimuli; but if you wanted imagination and creative leadership, you really had to *educate* people. I am sure we will all want to study more carefully that differentiation between education and training, which Dr. Winslow made.

CHAIRMAN: Mr. Morton, will you give us a little insight into the sessions of the Conference of State Sanitary Engineers?

MR. MORTON: As you know, the Conference of State Sanitary Engineers is an advance meeting, but it is traditional that that organization meet with the American Public Health Association. For a good many years the Conference of State Sanitary Engineers has had, as

full members of the Conference, only the chief engineers of the several states and territories and representatives of the U. S. Public Health Service. This time, the meetings were attended by more than a score of sanitary engineering representatives from the Central and South American countries. They were asked and urged to participate and did participate, apparently enjoyably and apparently with mutual profit.

The most significant result was that action was begun by which each of the Central and South American countries will be invited to have a full member of the Conference of Sanitary Engineers, thus furthering in a significant way our hemisphere solidarity.

CHAIRMAN: Dr. Mustard, do you think we can use in the JOURNAL that very generous resolution that the South Americans presented last evening at the banquet session?

DR. MUSTARD: I think that it would be unwise to make a point-blank answer at this time. However, that gives me an opportunity to say something that I have long wanted to say: The material as published in the JOURNAL is not always chosen on the basis of its absolute worth, but rather largely on the basis of its relative worth.

We turn down about two and a half papers for every one that we accept. Consequently, the question of whether or not we could find a place for those resolutions in the JOURNAL would to some extent be a matter of space. However, other factors would influence it, in that we do believe that one of our great opportunities, as I have just said, is that of developing better relationships with South and Central America.

These Latin Americans are, incidentally, the most courteous people in the world, and things that we may sometimes overlook or perhaps not pay a great deal of attention to, are matters of considerable importance to them. And so I should think we ought to give very careful consideration to the publication of these resolutions.

I should like to say one thing more about the JOURNAL, I am very anxious to get papers, to have papers come in from some of the younger people in the Association. There are certain names, including my own, that I have seen so often in print that I am weary of them, and I should like to see some new blood come pumping and pulsing through in terms of papers. Now, I am not going to promise you that just because you are young, you are going to have your paper accepted, but I can promise you that merely because you are not in the "stuffed shirt" group, there is no reason why your papers will be turned down, and I should welcome contributions from some of the younger members of the Association.

CHAIRMAN: Dr. Perkins, some of us did not get around to all of the meetings that we wanted most to attend, and I must confess that one of the papers that I was particularly interested to hear was that by Dr. Robertson of Chicago on germicidal vapors as a means of disinfecting air. Please give us a summary of what he said.

DR. PERKINS: Dr. Robertson reported further on his experiments with propylene glycol. For those of you who are not familiar with his previous experiments, this hygroscopic material, when sprayed into the air, has the capacity to kill microörganisms in the air; so you can see its possibilities in the future control of air-borne infection. As the effect is instantaneous, it seems clear that this aerosol performs its work in the vapor stage rather than in the droplet form.

The most interesting aspect of Dr. Robertson's paper at this meeting, to me at any rate, was a further report on his studies of toxicity. The question which immediately comes to mind is

what is the effect of these vapors on man? Propylene glycol has been given orally and intravenously to human beings without toxic reactions. Nevertheless, Dr. Robertson has hesitated to subject human beings to breathing the gas until it has been adequately tried on animals. He has some rats which have now been subjected continuously to this vapor for fifteen months without any apparent ill effect. He has also tried it on monkeys, a step closer to the human being, and they have been subjected to this vapor continuously for a period of four months; also apparently without any ill effect.

CHAIRMAN: Dr. E. R. A. Merewether of the British Ministry of Labor is here —Dr. Merewether, does that relate to anything that has been done in England in connection with attempts to control respiratory infections?

DR. MEREWETHER: Yes, it does. As you may know, the Medical Research Council has experimented with various solutions for disease-infected atmospheres, mainly in connection, of course, with shelters during the blitz winter, and the one they have been using mostly has been an ordinary hypochlorite solution. That, of course, is not suitable for a room like this one, because, as you will agree, it would bleach the curtains, for instance, but it is very suitable and cheap for vast numbers of shelters which have been occupied during the night and require disinfecting before being occupied again the following night.

With regard to factories, various experiments have been made using cheap oil on the floors, and these have been found to reduce the percentage of hemolytic streptococci and organisms of that class.

I would say that we in England have not progressed very far, and I am deeply interested in this paper, which unfortunately I could not hear because it was out of my session, and I am hoping to be able to read it in the published proceedings. There is no doubt that as the war progresses and transfer of populations takes place, even on the small scale that has happened in my country, this question of the transfer of respiratory infections is of supreme importance. In that connection, we have had an increase of cerebrospinal meningitis in my country, and we also have thought of separating people in canteens, in factories, etc., by cellulose acetate screens and the like. But, as I say, we have not progressed very much further than thinking and experimentation, except with the disinfection of shelters.

CHAIRMAN: One of the features of this meeting has been the accessibility of Dr. Merewether, Dr. William Frazer, of Liverpool, and Sir John Orr, who have added much to our interest.

I wonder if Professor Winslow, with his broad experience in the field of ventilation and industrial hygiene, has any comment to make on the present status of this effort to disinfect the atmosphere, especially as it may be used in conjunction with the ultra-violet light method.

PROFESSOR WINSLOW: I have just finished an attempt to review the history of epidemiological thinking, the last chapter of which deals with Chapin's modes of infection, and I have come to the conclusion, in writing that chapter, that the one new principle that has altered our conceptions of epidemiology since 1910 was this discovery of the wider range of atmospheric transmission. I think the evidence is sufficient to show that under appropriate circumstances the control of this type of infection is desirable, and that it can be accomplished either by the use of ultra-violet radiation or by the use of aerosols. I do not think we know the relative advantages of each under various conditions, but we have two good methods of dealing with atmospheric infection.

CHAIRMAN: Mr. Barron, you were

Chairman of the Engineering Section where you had a paper on the subject of ultra-violet light.

MR. BARRON: Yes. Professor Wells, of the University of Pennsylvania, presented a very interesting paper regarding his observations of the incidence of measles, I believe, and some other communicable diseases under conditions where in one part of several schools, irradiated air had been used and in other parts ordinary ventilation had been used, with quite remarkable differences in the incidence of communicable disease.

CHAIRMAN: You are going to see much more about this in the pages of the AMERICAN JOURNAL OF PUBLIC HEALTH.

Dr. Frobisher, tell us what is new in the field of syphilis serology at this Annual Meeting.

DR. FROBISHER: I sat in on a rather interesting discussion of new methods of the use of the test in syphilis serology, a screening device to eliminate excessive amounts of work in the laboratory, and a study of the verification test. These papers were commented upon by Dr. Kahn of Michigan and his coworkers; Mr. Webb of Georgia read one of these papers. The details of the technic will probably appear in the JOURNAL, so that I think we need not go into that particularly.

I was interested in the argument that arose regarding the reporting of the results of laboratory tests. It seems that many laboratories run several tests: they may run the Kahn test, the Eagle test, the Hinton test, and maybe two or three others, and those tests do not always agree; the physician is sometimes left to find out and to decide for himself whether the patient has syphilis or not. He is often at a loss, and he calls up the laboratory and says: "What do you think? Is this a case of syphilis or isn't it?" And the question came up as to whether the laboratory had a proper function to summarize and average up the results, all the 4-pluses and 3-pluses and plus-one-and-a-half, and turn out an average result and say: "That is the result . . . we think the patient has syphilis."

I do not think the difficulty was settled while I was there, but it brings up the whole question of laboratory reporting.

The same problem has arisen in connection with reports on typhoid serology, the H and O and Vi agglutination test, and the various titers that are reported, and whether the laboratorian should summarize his report for the physician or leave the physician to wade through it and look up the literature and decide for himself what the report means.

I think it is an open question. There are two decided schools of thought on the matter, and perhaps we might hear an opinion or two before we get through, because apparently the feeling is quite distinct. There was no settlement of the question while I was present, but I think it is a very live one that has to be settled eventually.

CHAIRMAN: Dr. Baumgartner, will you give us a brief resumé of what happened in the round tables of the Maternal and Child Health Section, where various kinds of pediatric problems came up?

DR. BAUMGARTNER: The chief problem that came up in the round table I attended was the establishment and maintenance of a normal appetite in terms of nutrition. It was interesting that, instead of talking about how to cure babies or school children of not eating properly, the whole emphasis was put on the basis of how to prevent them getting that way at all. I think probably the discussions could be summed up most aptly by saying all the experts who were there thought the baby was more important than the clock. They did not think it was very important any more to be sure the baby was fed a

given number of calories at a given time. They pooh-poohed the idea that the baby was nothing but a calorimeter.

They seemed to think that parents and pediatricians and nurses had gone around not paying much attention to the personality of a baby, paying no attention to his normal appetite, and, probably as a result of many of their admonitions, have just ruined what might normally be a perfectly good appetite in a small child. They pointed out that a baby ought to like to eat, that mealtime should be a pleasing time instead of a battleground or disciplinary period. They pointed out that most children's eating problems came about by mothers being worried that they did not eat. They gave practical hints.

Most pediatricians know well that a child of two does not eat as much as a child of one, but it is hard to convince a mother of this fact. Dr. Casparis says he handles it this way: He says to a mother of a child: "He has tripled his weight in one year, he weighs thirty pounds. Would you like to have him weigh ninety pounds next year?" Then she shudders.

The session was full of practical hints, though I am not sure we can get the participants to write them down so we can get them in the JOURNAL. It is a new approach and, inasmuch as public health people are responsible for the feeding habits of a large number of children, it seems to me important for us to know this new point of view in the field of pediatrics.

CHAIRMAN: Dr. Baumgartner, would you say we had a device here in terms of these round tables that we ought to use again? I understand this device has been used by the Academy of Pediatrics. Do you think it suits our needs?

DR. BAUMGARTNER: It certainly suited our needs in the session I attended. How was it in your section, Dr. Deitrick?

DR. DEITRICK: We had to cancel one round table of our three because the leader was called to Washington. Both round tables were considered very satisfactory.

CHAIRMAN: The Program Committee is going to consider that idea of the further use of round tables. Was the number in attendance limited, Dr. Deitrick?

DR. DEITRICK: Yes, it was. We tried to limit it to forty-five, but fifty-two crept in to one of the sessions.

CHAIRMAN: Dr. Perkins, what happened in that paper I hear so much about in the Epidemiology Section on this matter of water supplies and infantile paralysis?

DR. PERKINS: Dr. Kenneth F. Maxcy of Johns Hopkins University presented his paper in such a scholarly manner that I hesitate very much to attempt to interpret it and summarize it for you.

Dr. Maxcy first pointed out that certain data, which for the most part have been accumulated in recent years and are largely of a laboratory nature, are apparently consistent with the possibility of poliomyelitis being transmitted through water supplies. Some of these data are the finding of poliomyelitis virus in the stools of cases, contacts of cases, of other individuals in the community; and the isolation of the virus from sewage coming from hospitals in which there had been poliomyelitis cases, and even sewage draining certain communities in which poliomyelitis cases had occurred.

Then he pointed out that certain strains of the virus apparently are resistant to chlorination in the doses ordinarily used in the treatment of water supplies. He further stated that, although it had not been published as yet, a manuscript had come to his attention which seemed to indicate that the virus could survive passing through purification processes ordinarily used in the treatment of water supplies.

He then went on to say that, in spite

of these data which are consistent with that possibility, the pattern of spread of poliomyelitis in nature does not suggest that it is usually spread through water supplies. He substantiated his statement by various points, such as that there had not appeared in the literature a report of a large outbreak having the well known characteristics of a water-borne outbreak. He stated that usually there is a predilection for rural areas rather than city areas; that even here it spreads out in a radial manner and apparently is not influenced by the local water supplies involved.

He also pointed out that, even though perhaps occasionally it might be spread via water, this would not justify classification as a water-borne disease, and gave as examples tularemia in Russia and Turkey, which has occurred there as a water-borne disease, though ordinarily it is not so considered. The brucellosis outbreak in East Lansing, Mich., and the amebic dysentery outbreak in Chicago, were also cited as unusual instances of water-borne transmission of diseases not ordinarily transmitted in this manner.

CHAIRMAN: You may recall that the definitive article describing the outbreak of brucellosis in East Lansing appeared in the AMERICAN JOURNAL OF PUBLIC HEALTH. Dr. Perkins, does Dr. Maxcy's conclusion check with your experience in New York State?

DR. PERKINS: Yes, and with our experience in Minnesota.

CHAIRMAN: Mr. Morton, you had a paper on "The Epidemiological Basis of Environmental Sanitation." Please tell us about that.

MR. MORTON: In a symposium, Dr. Gaylord Anderson presented a paper on "The Epidemiological Basis of Environmental Sanitation." In this paper he showed by example that some procedures of environmental sanitation cannot be justified on an epidemiological basis. He therefore made a plea for better analysis of the program, and especially when faced with any reduction of service available he recommended that the selection of things to be done should relate to their epidemiological or direct public health value.

He did not advocate throwing over all esthetic values. He said that, if esthetic values can be maintained without sacrificing something which by the analytical approach which he recommended had been found more valuable, they should be maintained. In other words, if you can retain the most valuable things and still have some of the values left that are desirable because they are decent, he did not object. It was a very useful, a very interesting, and stimulating paper in urging a more thoughtful approach to environmental sanitation.

CHAIRMAN: Mr. Thomas Stowell of the New York State Department of Health, who has been in charge of the motion picture theater here has just come in. Mr. Stowell, what were the highlights of the motion picture exhibits? What new things have you seen there? Don't be afraid to include some of your own New York State films that are good.

MR. STOWELL: This year again we have found an unusual interest and a hunger and thirst for nutritional films, good nutritional films; and in that connection we found a great deal of interest in a new film produced by the St. Louis Dairy Council on "Making Ends Meet," and in "Hidden Hunger," the national nutritional film. It was quite interesting that two of the most popular films that we exhibited were Canadian films, one from the Saskatchewan Cancer Commission, a new cancer film, "That They May Live," and another "Food, Weapon of Conquest," produced by the National Film Board.

There was interest also in "Local Health Problems in War Project Areas," which illustrates problems arising in New York State when a large war proj-

ect entered a very small community. Another film, "The Ominous Arms Case," on back siphonage gotten out by the plumbing industry, created a great deal of comment.

One other thing I think was quite noticeable this year: an interest and a demand for dental hygiene films, which was partially met by a new film from the American Dental Association, called: "Our Teeth." As to scientific films, we had one session on films designed for professional audiences only, and of the sessions we had, I think that it had the lowest attendance, so I am wondering whether that is really worth while.

CHAIRMAN: Mr. Stowell, is the silent film entirely out of the picture now for health departments and voluntary agencies, or is there some use still for the silent film?

MR. STOWELL: I should say there is still a great use for the silent film, especially in more or less technical subjects; especially the silent film for organizations that want to produce their own films, and I think that is to be very much encouraged, too. We had a film from San Jose, Calif., on "Home Nursing"; they tell me that they felt the definite lack of a good home nursing film, so they made one. Although it has technical disadvantages, I think, it still is not a bad job at all; that was made silent and will serve a very definite purpose.

CHAIRMAN: Is color a necessity in films of that sort?

MR. STOWELL: Not at all. Color is advisable in films that you expect to show to lay audiences, of course, especially from the West. I understand they do not like to look at pictures around California unless they are colored, but in the East we do not find that difficulty.

CHAIRMAN: You of the audience must not expect us here in this review, of course, to be exhaustive; we have no intention of taking up every important paper here, and if we give disproportionate emphasis to one subject, please remember that we will hope to balance that emphasis through the JOURNAL and in other ways.

While we have Dr. Haralson here, the Territorial Health Officer of Hawaii, who is facing tropical diseases, if Dr. Frobisher will tell us what new light on tropical diseases came out in this meeting, then we will get Dr. Haralson to comment and perhaps include some other angles which the emergency in Honolulu has brought to his attention. Dr. Frobisher, will you open the subject?

DR. FROBISHER: Yes. The first mention of it that I heard was a talk by Dr. Hitchens, who regretted the lack of good general training in tropical disease, in men coming into the medical corps in the Army, and hoped that it might become more extensive.

The point was brought out also that there was a real possibility of the tropical diseases becoming ectotropical, so to speak, on the return of troops from tropical regions where these so-called exotic diseases exist. The question comes up, for example: when is a tropical disease not a tropical disease? It may not be a tropical disease when some of these people return from infected regions.

In discussing this matter with the other members of the editorial staff, the point was made that these men may bring back these tropical diseases, but they do not bring back with them the vectors, so that the danger is perhaps not so great. A man bringing a transmissible disease into an area where there is a related insect vector is a considerable menace, but the mere return of a man from the tropics to some northern area is not necessarily a menace.

CHAIRMAN: Dr. Mustard, which of the so-called tropical diseases do you regard as really important as you select papers for the JOURNAL?

DR. MUSTARD: In our JOURNAL we do not cover the more, shall we say,

exotic tropical diseases. We recognize that, with returning troops, opening up of commerce, etc., we may have flares of these rare diseases in this country, but for the great mass of public health workers and, I think actually for the people who are going with the armed services into the tropics, we of the JOURNAL are concerned primarily with giving information about two diseases. One of those is malaria, and the other is dysentery, and I think if the average individual can get himself thoroughly steeped in such knowledge as is available on the causes, control, and treatment of malaria and dysentery, he will have broken the back of that problem. If he does not, it will break his back. It is those two diseases that we should be principally interested in, but not necessarily exclusively, in connection with tropical diseases.

CHAIRMAN: Thank you, Dr. Mustard. Now, Dr. Haralson, how does this whole subject come to bear on your whole problem in Hawaii?

DR. HARALSON: Well, in the Territory of Hawaii, fortunately, so far as malaria is concerned, we do not have the vector; we do not have the Anopheles mosquito. It is a subject of very great concern, however, because we have no idea as to why we do not have the vector. Undoubtedly, Anopheles mosquitoes have been brought there in times gone by, but for some reason they no longer breed, or did not breed, in the Territory. I can theorize on the subject, but I have no answer.

We have had for a number of years an occasional case of malaria reported. We usually are able to trace that patient back to some outside malarial area. Since we have a larger concentration of troops out there at the present time than we have had in recent years, to say the least, we have had a number of cases of malaria, but they have all occurred, however, in troops from the mainland, and military authorities are taking every possible precaution because, of course, we might get an Anopheles mosquito.

We do have the vector for yellow fever, but through good fortune, or good work on the part of the Quarantine Service, we have not had any yellow fever.

CHAIRMAN: How about dengue?

DR. HARALSON: We have not had any dengue for a long time, but we do have the vector. I do not know whether dengue is present in the Islands of the Southwest Pacific; I believe it is in the Philippines. Some twenty-odd years ago, I understand, we had a severe epidemic of dengue. So, for those principal diseases, we are just living in hopes and passing the ammunition.

We do have a couple of conditions that worry us. We have typhus fever and we have bubonic plague. Last year, we reported more cases of typhus than we ever reported before. Some of us question whether there has been an increase in number of patients or whether we are getting better reporting; we think we are getting better reporting.

It is the rat-borne variety and, of course, the eradication of that is theoretically simple: just eradicate the rat, and we will control it. I have been told since I came to the mainland on this short trip, that we had to get down to business and eradicate the rat. So, I issued cordial invitations to these experts and asked them to come out and lend a little assistance. You, friends on the mainland, have a cordial invitation to come out and give us some assistance, where rats breed out in the open and in the canefields, and there are plenty of tropical fruits and foods of all varieties to allow them to propagate in numbers.

So far as dysentery is concerned, in some areas some of us have no particular fear. Of course, from the military standpoint, this is one of the most disturbing possibilities. And since we have troops fairly well scattered over the

area of the Territory, the water supply and sewage disposal is, of course, a subject of considerable moment. There has been very close coöperation between the military authorities and our own local health departments and water boards, in doing everything possible to provide safe supplies. In spite of this, however, we know that we have so many supplies that are not properly protected that we do have fears. Fortunately, up to the present time, we have certainly had no outbreak of widespread importance.

CHAIRMAN: Thank you, Dr. Haralson. The JOURNAL recently has brought you word from the front line in Hawaii and in Alaska. We carried a paper by Dr. Courtney Smith on the work that is being done in the Territory of Alaska. We will try to keep alert on things that are happening on the firing line.

Dr. Haralson, as you go back to Hawaii, you carry our greetings with you, and we hope the news from there is going to continue to be good. Dr. Haralson has the only unit under the American flag where compulsory vaccination against smallpox and against typhoid fever has been uniformly enforced. Is that correct?

DR. HARALSON: I do not know whether that is correct. We did have enforced vaccination under military order, which was not as serious as it sounded, but I think if we, throughout the country, could get the people to appreciate the necessity of compliance with our own regulations as easily as we apparently did out there in connection with the military regulation, there would be no difficulty whatsoever in getting this very desirable result accomplished.

As a matter of fact, we had no sections or groups who objected. We know practically all of those whom we vaccinated because shortly before the vaccination was done, the entire population had been enumerated and registered and had been given identification cards—I carry my own—and when they appeared for vaccination, a record was made. When we checked up and they had not appeared, we simply sent a message by a neighbor or friend. But, had it not been for that order, which at the present time they accept without question, that is, military order, we would probably have had the same difficulties and troubles that most of us experienced in times gone by. We claim something like ninety-five per cent against those two diseases and a considerable number against diphtheria, which was not required.

CHAIRMAN: Thank you, Dr. Haralson. Our best wishes go with you.

CHAIRMAN: We got away from the subject of tropical disease a moment before we intended. I would like to ask Dr. Henry Meleney, a member of the editorial board of our JOURNAL, whether in his specialty of tropical medicine he can throw any light on what we have learned here.

DR. MELENEY: I cannot add anything out of the meeting here today, but at a meeting of the Association of American Medical Colleges earlier in the week, approval was given to a plan for subsidizing staff members of the medical schools, who need further training in tropical medicine and parasitology, in order to conduct satisfactory instruction in their schools, and to provide for their attendance at special courses for this purpose within the next year; and I hope that will improve the teaching in the medical schools.

Dr. Mustard, will you say a word on the studies of local health units and the extent to which these seem desirable?

DR. MUSTARD: I should be very happy to talk about that, but I happened to see Dr. Haven Emerson in the audience. He is chairman of this subcommittee of the Committee on Administrative Practice, immediately concerned with that problem of nation-wide service and how it must be handled. I

should beg you direct your question to Dr. Haven Emerson.

(In the absence of Dr. Emerson, Dr. Mustard continued.)

DR. MUSTARD: I think there has been an increasing interest among public health workers not only in the amount of territory in the United States which is provided with reasonably adequate service, but there has arisen this new interest in what is to be done and how it is to be done in those still rather vast areas where the public health service is little better than it was a hundred years ago. And it is with the idea of studying geography, of studying square mile areas, of studying state laws, of studying budgets available, population concentrations, etc., that this committee, of which Dr. Emerson is Chairman, has been put to work.

Many of you, I am sure, saw the large folder which they had in an exhibit here with existing and proposed districts for the various states. I am sure that one who comes from any individual state and looks at those districts would be unlikely to agree that those particular red lines are the ones which should divide the state up into administrative districts or areas. And yet, even if we can start an argument and continue the thinking and action, I believe this committee of Dr. Emerson's will be, shall we say, the catalyst which will bring about finally this nation-wide service.

I think there is no doubt we have lagged somewhat and forgotten the people who were not served, being too much concerned with what we have already done. A reflection of that interest was to be found in a discussion the other day at this meeting, the debate on what type of health unit should be used in the United States.

CHAIRMAN: Thank you, Dr. Mustard. Some of us think there is significance in these units as they may help us to forecast the number of people who will be necessary for staffing adequately the units across the country. You will remember that the Association passed a resolution, yesterday, saying in effect that we felt that all areas of this country should have adequate, full-time local health service. That is similar to a very significant resolution passed by the American Medical Association at its meeting in June.

CHAIRMAN: Dr. Louis I. Dublin is Chairman of a Committee on the Study of Voluntary Health Agencies, which reported this morning. I wonder whether Dr. Dublin would give us in a capsule the significant developments in that field.

DR. DUBLIN: Mr. Chairman, the first meeting under the auspices of the American Public Health Association of anything that looks like a study in the voluntary health field took place this morning. We had an hour, we had four speakers, there was an audience of perhaps 300, who seemed to be thoroughly interested in what was presented. The important point that was made was this: here is a vast field of health work which has heretofore received no concerted study; the field has grown up like Topsy; it represents a thoroughly American movement. If it could be summed up altogether, it might amount in terms of dollars to as much as was spent for official health work in the United States; in terms of time and effort, it would undoubtedly go way beyond the amount of health work done by official agencies. In terms of effectiveness—well, who knows? But here it is, a great big movement, spontaneous, full of human interest, involving the good will of millions of people, and a great big question mark as to what it is doing.

It was felt that the time had come for that sort of thing to be investigated, studied, analyzed, tied up to the official agencies, if you will; fundamental questions asked as to standards, as to interrelationships between voluntary agencies themselves.

In this particular health activity, we have sometimes multiple developments; in one community, fifteen agencies engage in the care of crippled children. In the field of mental hygiene, much the same story. Questions that are in the mind of everyone are something like this: How are they related to each other? Do they stand in each other's way? Do they coöperate? Do they help the health officer? What does the health officer think about them? Are they really a part of the machinery of public health in America? These are the questions that are being attacked.

Selskar Gunn, a man of extraordinary ability, with a fine background, is giving his full time, all his energy, to attacking this problem. He has Philip Platt working with him; he has a good committee, and I think he has aroused the interest and good will of a large number of our people who in their own communities will now begin to ask questions; begin to look into their own situation; write back; call for help; they say: "Help us to formulate the sense of this thing." And we hope by the time this study, which is launched on a three year basis, is completed, we will know something about this giant.

If I am to take advantage of this grand opportunity, I bespeak for this effort your good will. Keep in touch with Selskar Gunn and Philip Platt, write to the National Health Council; raise issues; tell us of the problems you have; and if you get inquiries in the form of questionnaires to fill out, please help us and do it.

CHAIRMAN: Thank you, Dr. Dublin. I am going to enlist Dr. Dublin's help to get us a manuscript on this subject. Our efforts so far from the study staff have found them so absorbed in the job of getting the work done that we have not been able to give you manuscripts through the JOURNAL, but we have standing requests for those, and we hope to produce.

There are two large fields of interest here that have not yet had even slight attention, and I am thinking particularly of the public health nurses. The nurses here had interesting programs, not only separately for the Section but joint sessions with other Sections. I wonder whether Miss Dorothy Rood, of the University of Pittsburgh, would care to summarize the highlights from the public health nursing standpoint.

MISS ROOD: One thing that stands out to me as a real highlight in nursing is the Curriculum Guide which has been prepared under the auspices of the U. S. Public Health Service and the N.O.P.H.N. The nutritional section of that guide was discussed in one of the meetings. I believe it offers an instrument which has not been presented in any other field, a study of what should go into the content of the training of a public health nurse. I think it has wide usefulness for health officers and others, as well as for those of us for whom it was prepared—those of us who are preparing nurses for public health work.

Another aspect was the field of community planning, and I think that planning must be done for the private nurses, the subsidiary groups and student nurses; and each community must be studied to see how and where the services would be carried by the ones who are left in the community.

Out of that grew a resolution which was passed by the Association yesterday, which I think had far reaching influence in nursing and in the programs of nursing, and that is that bedside care should be considered as an integral part of the nursing program—that it is important for health departments and the official agencies to include bedside care, just as much as the private agencies, in their program.

I think these constitute probably the greatest highlights that we have had, except for one current that I think has

run through all the sessions: the need of keeping on with the professional education of our young people, especially when our young nurses are going into the armed forces, we must recruit enough to keep on with our programs. We must keep on training personnel, so that we will not be short in the years immediately following the war.

CHAIRMAN: While we are on this subject, will Miss Dorothy Deming give us a resumé of the special session on Merit Systems?

MISS DEMING: We met in a rather small meeting to discuss what the A.P.H.A. is doing in the field of the Merit System. We discussed the matter from two points of view: (1) the rather intimate one as to what the A.P.H.A. can do for the Merit System supervisors in providing examination material for the examining of personnel in the states; (2) which was less intimate and a very general discussion, on what is the matter with the Merit System? what is good about it? what is bad about it? Do we want one?

As the result of a very lively discussion, we came to the conclusion that now more than ever before is the chance to train and to assign jobs to qualified personnel; partly because, if we are sharing our present personnel with the armed forces, the weight of responsibility must be carried by even better trained people than formerly. And, because when the war is over and the troops begin coming back, not only must we have trained personnel on the job to continue a high level of service, but we must be ready with the Merit System running and functioning, in order that the goal of qualified personnel appointed on the Merit System basis should be an actuality and not just a dream, which it has been for so many years.

We had the pleasure of having with us representatives from the U. S. Children's Bureau, Dr. Eliot, Miss Blakeslee, and Dr. Dailey, and the members of the consultant nursing staff of both the U. S. Public Health Service and the Children's Bureau; so that it was a true meeting of the groups concerned with the administering, the functioning, and the actual working out of the Merit System as it has been set up for us by the federal groups.

CHAIRMAN: Miss Deming might have gone on to tell you that Merit System questions are now available to the State Merit System Agencies for public health nurses, and now we are moving out into other fields in which shortly we shall have questions ready.

Miss Deming's associate in working in this field, and mine, is Dr. Mary Steichen, but in view of the shortness of the time, I am going to ask Dr. Steichen not to go on with this Merit System study, which some of us think is one of the high-water marks of the Annual Meeting, but instead to give us a resumé of what she heard at the luncheon session at which Sir John Orr of Aberdeen, Scotland, spoke.

DR. STEICHEN: One could have listened to Sir John with two attitudes: you could sit back complacently and say: "Let's see what they are doing on the other side?" Or, you could listen with a receptive attitude and say: "What have you got to give us, Sir John, that we can use?"

I think some of you who heard Sir John will agree that he mentioned several factors which certainly we could take over and take over fast. He mentioned, for instance, that everybody was concerned — everybody, men, women, and children—in increased food production. That is a job for all of us, and I imagine it will be undertaken and is being undertaken under the County Agents of the Department of Agriculture.

He mentioned the increased efficiency of distribution and rationing of foods, and I think people in this country are going to welcome the rationing of foods, because it will lead to a better and more

equitable distribution of the more vital elements of nutrition.

I was particularly interested in the description of the national loaf of bread which was established by the government; it sounds good to me, everybody who has tasted it says it is the best bread he has ever eaten.

Then there is the extra free rationing of very vital foods such as milk and eggs to mothers and children. We have got to come to that. That, plus the communal meal for all workers, leads to the conception of a leveling of the national diet: the poor people will come up and the richer people, who certainly do not need to be fed any better than they are as far as quantity is concerned, but often need to be fed better as far as quality is concerned, will come down until there is a broader scale of good nutrition.

The most important thing I got out of his address was that it reminded me of a school I know which burned down. It was a great disaster to the whole community, because the children and the parents were very much concerned with that school. The next day after the fire, every class met, and from then on it was a progressive learning process, a constructive use of a disaster for every single person in that school. So, by the time the school was rebuilt, the older children had taken part in construction; they knew what heating and ventilating meant; the little children had learned arithmetic by figuring what the school cost, etc.

Of course, you cannot burn a school down to provide a good constructive experience, just as nobody wants a war, but we can turn this war into a vital and lively experience if we use it constructively. I think that is what Sir John had in mind when he said that the medical profession should take up the cudgels and plan what they are going to do next, so the measures we take now will lead into a wider and more efficient scale of achievement in public health.

CHAIRMAN: We should now look at the field of industrial hygiene and pick up a few of the high spots. Dr. Leonard Greenburg is here, a member of the council of that Section. Dr. Greenburg is in charge of industrial hygiene under the State Department of Labor in New York.

DR. GREENBURG: Mr. Chairman, in my opinion, the outstanding new development discussed by the Industrial Hygiene Section revolved around the question of nutrition and eating facilities for industrial workers. Dr. Boudreau presented a beautiful discussion of this subject, based on his research studies on the nutritional status of workers in selected industries.

There is clear indication that the nutritional status is far below anything which should be called adequate or desirable, and steps must be taken as soon as possible to provide more satisfactory diets for our American workers.

In the British experience, this followed along two general lines, and it would appear that in our American experience we will have to do the same thing—(1) the widespread use of publicity material, and (2) some kind of voluntary and official introduction of eating facilities and food into industry. The British law now requires that all plants having 250 or more workers be provided with a canteen. In the United States, there are no legal requirements in any state of the Union, and serious consideration must be given to this aspect of this important problem at the earliest possible moment.

There was a very interesting paper on the first survey of industrial nursing in America being made by a number of states in coöperation with the U. S. Public Health Service. The speaker provided a resumé of the results of 700 factory investigations along these lines. I think the Public Health Service will publish a bulletin on this subject, and

perhaps our JOURNAL will include such a paper. So far very little is known quantitatively about the status of industrial nursing in America.

There were several other interesting papers. The first recent paper to appear on the basic chemicals used in synthetic rubber, especially a substance known as styrene, and one of the workers from an important chemical company in this country presented a discussion of the toxic effects of styrene.

There were other good papers, on the training of industrial hygiene personnel, which leads one to believe that the pool, at the present time, is very limited, and we have been stumbling in our efforts to divide up the present personnel resources. It seems to me that we have been lacking in a certain degree of planning.

Mr. Chairman, if I may revert to one other question, which does not concern industrial hygiene, I would like to mention for a moment this question of sterilization of the atmosphere. Some years ago, I had the opportunity of studying an epidemic of cerebrospinal meningitis that took place between Manila and Honolulu, and the persons who were subjected to the epidemic and the victims of the epidemic, during which the mortality at times was 26 per cent, were transported on ships between the Philippine Islands and Honolulu. I was startled the other day, when I saw pictures of our American boys being transported in vessels of this same type, under similar crowded conditions, and I believe that this is a direct challenge for action by the American Army and the American Navy.

I think whatever we know about the sterilization of the atmosphere should, if it is safe, be put into effect under these unusual conditions when we are transporting large numbers of soldiers and sailors across the ocean, under conditions of severe crowding.

I cannot close without mentioning Dr. Merewether's very interesting discussion at our luncheon. He told us how the British, without elaborate schemes of administrative diagrams but apparently with more persuasive and effectual personnel, had done a wonderful job in keeping factories safely going in Great Britain under the most trying conditions.

CHAIRMAN: Thank you, Dr. Greenburg. I am glad you called attention to Dr. Merewether's contribution. We also appreciate Dr. William Frazer's presence here. I do not see him in the audience, but you will find a very interesting manuscript by him in the December issue of the AMERICAN JOURNAL OF PUBLIC HEALTH, the manuscript which he abstracted in a session before the Health Officers Section at this meeting.

I call now on Dr. Baumgartner to tell us about birth records and vital statistics, and new uses that can be made of them in administrative service.

DR. BAUMGARTNER: This was a very interesting session, a joint session of the Vital Statistics Section and the American Association of Registration Executives. Birth certificates apparently have come of age and are serving various administrative uses. All of us are used to thinking of them as ways of finding out whether people put drops in babies' eyes, or sometimes we think of them as tools by which we can follow congenital lues. Some of us think of the weight that is recorded on birth certificates as a record of where premature babies are and send visiting nurses to visit them. Some of us have learned to find out about crippling conditions of children in this way, thus adding the names to crippled children's registries.

All of these were pointed out in this meeting, but the new use was to see a large map of Connecticut and on this map to see where the new babies had been born, and see the Connecticut State Health Department apparently planning where to send in more personnel, be-

cause more babies had been born down in this corner as a result of migrations to defense industries. Apparently birth certificates have a lot of uses aside from filing them in books.

CHAIRMAN: Thank you. I introduce now the Commissioner of Health of St. Louis, Dr. Bredeck. I would like to ask you whether, during the time you have made such a contribution to our comfort and convenience here, St. Louis and your Health Department have been able to get anything out of this Annual Meeting. I would like to pay a very sincere tribute to Dr. Bredeck. He has been our host here in a most acceptable way and, on behalf of the Association staff and on behalf of you all, I suggest that we give him a salute (applause for Dr. Bredeck).

DR. BREDECK: Thank you very much. Of course, the local health officer is interested in having a convention, for two purposes: In the first place, he feels a good deal like the cow who has been on the pasture too long until she grows thin. Another is that like the fellow who plays the same phonographic record too long: the listeners get tired of it. I have been talking public health in this community for a number of years, and I get the impression that they are getting tired of the record, and during this convention, I and other members of the department have learned a number of new ways of saying things and, -of course, we are perfectly selfish about wanting you here.

We need the stimulation in this section of the country, and we have not looked upon it as a convention only for St. Louis, but the surrounding areas, East St. Louis and the County, the State of Missouri and the surrounding territory. And I have already seen the stimulation that occurs locally from such a meeting. People wonder why we do not get tired at the convention. Well, when you wait seventeen years for a convention, you can stand it much longer than two weeks, and you go through it without feeling tired at all, because this will have definite beneficial effects in many ways locally.

And, of course, being somewhat of an optimist—and I think that is the only way you can get anywhere—we feel very much indebted in having the convention. I say that not only for myself but for all of those associated with related fields in public health. And as I stated the other evening, I hope our next convention will be here before another seventeen years. Thank you.

CHAIRMAN: Thank you, Dr. Bredeck. Is Dr. McGavran in the audience? I would like to have him take a bow. He is the Health Officer of St. Louis County, to whom we are also indebted, with his staff, who have worked so closely with Dr. Bredeck and his staff. At any rate, we give him a greeting and our renewed appreciation supplements what we said yesterday.

We have come to the closing moment. There are several live subjects here on which our participants have said they would be willing to comment. I am sorry to have to bring it to a close, but I know some of you have train appointments. There are two papers which Dr. Perkins said this morning he would like to comment on, one was on the subject of dental caries and the angle of its epidemiology. That appeared in the November issue of the AMERICAN JOURNAL OF PUBLIC HEALTH. He spoke to me about another paper, that by Drs. Twinam and Pope, on the subject of a clear-cut tuberculosis outbreak; that too is in the November issue.

Now, the Editorial Board, the editorial staff, and the Program Committee would be glad to have you express your opinion as to whether you like this kind of a wind-up session, or whether you would prefer to bring the meeting to a close on the subject of our special interests as distinguished from our common interests. We would be glad to

hear your comments, because, if you want this kind of a thing, perhaps we can do it again.

I thank you for your undivided attention and tell you that, as we bring to a close the final session of this Seventy-first Annual Meeting, it is with a feeling of mutual interdependence that we go home, ready to carry on and meet whatever situations we are faced with, always knowing that we have this body of colleagues and this kind of support that will carry us through whatever comes.

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INSTRUCTION OF MEDICAL STUDENTS IN PREVENTIVE MEDICINE AND PUBLIC HEALTH

IN the latter part of October the meeting of the Association of American Medical Colleges and the meeting of the American Public Health Association overlapped to some extent. This, however, is not the important thing in relation to the October gathering of the members of these associations. What is important is the fact that each gave serious consideration to the question of instruction of medical students in preventive medicine and public health: what should be taught, and when it should be taught, and how.

The need for such consideration has long been obvious, and some three years ago the Association of the American Medical Colleges, at the request of the American Public Health Association, appointed a committee to work jointly with a similar committee of the latter organization to the end that there might be formulated jointly a program for instruction of medical students in preventive medicine and public health. Progress to date has consisted of: (1) a study of the problem as it is found in the various medical schools of the United States and Canada, and (2) collecting of documents which, on analysis, provide a cross-section of opinions of the majority of professors of preventive medicine and public health as to what is good and what is bad in the present situation, and what needs to be done about it. A report covering factual material was published in the April, 1941, issue of the *Journal of the Association of American Medical Colleges*, and at the October meeting of that association there was presented a summary of the opinions referred to above. The American Public Health Association for its part made this subject the theme of the meeting of its Committee on Professional Education, and in addition provided on its program for a panel discussion of this subject by those who actually teach it.

It appears then that this important subject is in the process of receiving the attention which it has merited. The committees concerned have received due encouragement from their respective organizations and, it is to be hoped, will act with such expedition as may seem wise under war conditions. They must,

of course, recognize on the one hand that all medical schools are at present harassed by accelerated programs, and by depleted faculties, and that there looms for the future a group of students not as mature as in the past, and perhaps to be selected by means not the most desirable. In view of these difficulties, the pressing of recommendations for immediate curriculum changes might at this time be inopportune. On the other hand, and in spite of the bedeviling things just mentioned, the committees will need to bear in mind that future graduates in medicine will go almost immediately into military service where the prevention of disease and mass medical service will loom larger than in civilian practice. In addition, it is possible that adjustments in the post-war period may carry newer responsibilities and newer concepts even into private practice, and thus for future civilian as well as for immediate military needs, the committees concerned may find it desirable to formulate rather quickly some general guide for instruction of medical students in preventive medicine and public health. But whether such a program is presented immediately or at a later date, the previous work of these committees leads one to believe that they will, in their final recommendations, remain practical; that there will be no tendency to impose a frozen teaching pattern on all medical schools; that they will recognize that medical schools differ in interests, organization, and resources, and will concede that, inasmuch as content, quantity, and quality of teaching in such departments as medicine and surgery vary from one medical school to another, so must there be differences in the teaching of preventive medicine and public health.

The matter has now reached a stage where one may well feel encouraged. The future work of these committees will be watched with interest.

WANTED: A BIOPSY ON COMMITTEES AND BOARDS

THE Editor wants very much to publish in the *Journal* a paper on the subject of committees and boards; a paper that will exhibit their structure, and function, their anatomy and physiology, their "positive health" and their pathology. *Journal* readers, therefore, are invited to submit manuscripts on this subject. The two adjudged most satisfactory by the Editorial Staff will be published in the early summer. The deadline date is April 30, 1943. Manuscripts must be received by noon of that day.

We send out this call because we consider the matter important. Public health workers, particularly in the voluntary agency field, luxuriate in committees, are possibly addicted to them. Given almost any opportunity or even an excuse, and the health organization goes into a sort of parthenogenestic spasm and delivers itself of a full-blown committee which, in turn, tends to exhibit an amazing immortality. But it is not with these phenomena *per se*, that one need be concerned, for admittedly, small groups must from time to time act for large ones: for exploration of new subjects, for review of old ones, for establishment of policies, for maintenance of relationships, for liaison, for swift and definitive action.

Those who accept this invitation then, need not attempt to make a case for committees and boards: their necessity is generally conceded. The matter on which light is needed is a quite different thing, and has to do with the composition of committees in relation to their functions. Does there exist someone seasoned and weatherbeaten in public health committee work, who has acquired through

this process or retains in spite of it, an ability to analyze, classify, and philosophize in simple language, understandable to other people? Can that same person get across to his or her colleagues an understanding of the assets and liabilities of a committee each of whose members represents some special interest, and indicate what may be expected of a board of professionals, or of a council or intelligent persons serving neither as experts nor as delegates? It would be too much to expect this person for whom we are searching to prophesy just what might be born of a committee composed of all these ingredients; but because many of our public health committees are thus hybrid and hashlike in membership, we may hope that information will be forthcoming as to the circumstances and objectives which would indicate one type of membership or another. We, as Editor, have no convictions. We have seen boards of experts act scientifically but entirely in a vacuum; and we have naïvely attempted to get action out of committees in which age, sex, race, residence, religion, and occupation were in proportions seen only in the epidemiology of syphilis.

From where, and whom will come this taxonomy of committees and boards? Who will develop a document which will guide the health officer and the local executive secretary in the matter of committee appointments? Has the West Coast, New England, or the Deep South, or possibly the Middle West, a son or a daughter who will lead public health out of the wilderness of committee chaos?

We most distinctly do not want mere descriptions of how committees and boards are organized here or there, and we shall give scant attention to manuscripts propped up by categorical statements, adjectives, and adverbs. Please avoid the use of the word "dynamic." What we hope for is at least two penetrating, analytic, and judicial essays.

BOOKS AND REPORTS

Chronic Pulmonary Disease in South Wales Coal Miners—*Medical Research Council. I. Medical Studies. Including a report by the Committee on Industrial Pulmonary Disease, a Medical Survey by P. D'Arcy Hart and E. A. Aslett, and a Pathological Report by T. H. Belt. London: His Majesty's Stationery Office,* 1942. 222 pp. Price, $3.00.

The high standard set by previous special reports of the Medical Research Council is maintained by this latest contribution on chronic pulmonary disease in Welsh coal miners. In addition to the fact that silicosis is one of the principal industrial diseases in Great Britain, compensation statistics indicate that the main problem of certified silicosis lies in the South Wales anthracite mines. These circumstances determined the selection of this site for an intensive study of the etiological factors influencing the development of pneumoconiosis together with investigations of the clinical and pathological aspects of the disease.

Although the classification of lesions as (a) reticulation, (b) nodulation, and (c) consolidation, differs somewhat from the generally accepted nomenclature, radiological studies indicated that the frequency and degree of pathology were proportional to the occupation, age, and length of exposure of the miners to coal dust. Workers in anthracite mines showed substantially more silicosis than those in the bituminous fields and hard-heading workers developed more lesions than colliers and far more than surface workers. While it seems clear that development of silicosis is closely correlated with the duration and intensity of exposure to silica dust no attempt apparently was made to measure that hazard in terms of dust concentration, particulate size or silica content of the dust.

The incidence of clinical tuberculosis diagnosed was low; even among miners with advanced pneumoconiosis, and the 95 per cent who reacted to the tuberculin test. In the opinion of local doctors tuberculosis is a less frequent cause of death in silicotic miners than either cardiac failure or non-tuberculous respiratory diseases. No attempt was made to diagnose tuberculosis on radiological appearances in the presence of pneumoconiosis.

Pathologically, pulmonary reticulation is considered as the earliest form of lesion which may be associated with respiratory disability. It is probably a type of fibrosis preceding consolidation but may co-exist with it, and probably is an integral part of silicosis (or anthraco-silicosis). ALTON S. POPE

Intelligence, Power and Personality—*By Dr. George Crile. New York: McGraw-Hill,* 1941. 347 pp. Price, $3.00.

George Crile was one of the founders of the Cleveland Clinic, often popularly called the Crile Clinic. He is an internationally known surgeon, the author of many books and papers and the inspiration of many young surgeons. It was he who first made plausible, even though he did so by an inaccurate and incomplete theory, the minimization of emotional shock in certain surgical operations. This is his first book in several years and those of us who have known how hard he has worked on the theory proposed in this book, the collecting and measuring of specimens for

the McBride Museum of the Cleveland Clinic Foundation, have looked forward to it expectantly.

Dr. Crile has tried to correlate the energy requirements of various animals, including man, and many wild animals which he shot and dissected on the spot in various parts of the world, with the weight of the brain, the heart, and the endocrine glands. His data are given *in extenso;* his conclusions are nowhere very explicitly stated. Dr. Crile still further confuses the reader by introducing many vague terms and concepts without taking the trouble to define them or to relate them to previous concepts and definitions. For example, one of his ten biological principles is: "In higher animals, the positive pole of the bipolar mechanism is generated by the brain; the negative pole is generated by the heart and the red blood cells." It may sound like quibbling, but mechanisms are not bipolar and if the metaphor is to be taken from the field of electricity, one cannot say that a pole is generated. The reviewer confesses that this and many other similar paragraphs are incomprehensible to him.

Another sample: "Intelligence, power, and personality are dependent on the absolute and relative size of the brain, the thyroid gland, the heart and blood volume, the celiac ganglia and plexuses, and the adrenal-sympathetic system." The author does not define intelligence and there is no evidence that he is familiar with its definitive and technical meaning in psychological science. Power is certainly too broad a word to use in an unqualified way in such a statement, and personality, which is also not defined, can scarcely be conceived of in such grossly quantitative terms as to be included in a mathematical formula of this kind.

It is interesting to learn that the jaguar has a smaller heart and a larger adrenal than the timberwolf and a thousand other items of carefully collected data of this sort. It is a stimulating theory that in some way the activity patterns of animals can be correlated with brain weight, heart weight, and gland weight. But it cannot be said that this book clearly indicates what this correlation is, or what the meaning of these data is. Psychiatry in particular, and medical science in general would be grateful for any contributions that would clarify the relation of the physical and chemical factors in personality with the psychological factors. This study, unfortunately, does not do so.

KARL MENNINGER

Public Health Nursing Curriculum Guide—*Prepared by the Joint Committee of the National Organization for Public Health Nursing and the U. S. Public Health Service. New York: National Organization for Public Health Nursing,* 1942. 206 pp. Price, $2.00.

The *Guide* gives a somewhat detailed statement of desirable goals to be attained in the preparation of public health nurses, with helpful suggestions on educational methods and content. The following areas are covered: I. Introduction to Public Health Nursing; II. Public Health Nursing Services, (1) Maternal Health, (2) Infant Health, (3) Health of the pre-school child, (4) Health of the school child, (5) Industrial Hygiene, (6) Mental health, (7) Nutrition, (8) Oral health, (9) Acute communicable diseases, (10) Tuberculosis, (11) Venereal diseases, (12) Pneumonia, influenza, and the common cold, (13) Cancer, (14) Diabetes, (15) Heart diseases, (16) Orthopedic and plastic conditions; III. Methods of Learning as Related to Public Health Nursing; IV. Public Health Organization and Administration; V. The Field of Professional Work as Related to Public Health Nursing; VI. Public Health Nursing Organization and Administration; VII. Field Experience.

The *Guide* does not attempt to organize the above subjects into definite courses but suggests that they may be integrated into a curriculum as best suits the individual school.

The *Guide* renders a most useful service to those responsible for public health nursing education for it organizes in an authoritative manner the essentials of a public health nursing curriculum. Its educational philosophy and scientific content have been carefully reviewed by leaders in each of the many fields concerned and therefore represent the modern trends in public health. Although this book is intended primarily for persons interested in public health nursing education, it can be read with profit by anyone in the public health field. H. W. BROWN

Housing Yearbook—1942 — *National Association of Housing Officials, Chicago, Publication No. N 159.* 192 pp. Price, $3.00.

This book is a compilation of a series of articles on housing progress during 1941 by various authorities in the field. Included in this edition are the following articles: Reorganization of Federal Housing Agencies; Division of Defense Housing Coördination Activities in 1941; Mortgage Ownership; A Stimulant to War Housing, Home Ownership, and Housing Standards; The Federal Home Loan Bank Board—1941; Farm Security Administration's Seventh Year in Rural Housing; Defense Housing under the Lanham Act; Housing Activities of the Federal Works Agency; Navy Housing; The Why and How in Housing Priorities; Rent Control Activities of the Federal Government—1941; Central Housing Committee Swan Song; Activities of National Unofficial Housing Agencies and Committees for 1941; Directory of Housing Agencies and an Index.

The present edition is an "economy" edition in that the state and local section is omitted along with an account of NAHO's doings and the editors' annual summary. C. P. STRAUB

The National Formulary—*Prepared by the Committee on National Formulary of the American Pharmaceutical Association. (7th ed.) Washington: American Pharmaceutical Association,* 1942. 690 pp. Price, $6.00.

Both *The National Formulary VII* and *The United States Pharmacopoeia XII* have a particularly important place in medicine because they are the official sources of information on drugs. Since 1906 the standards for drugs as given in the various editions of these books must be adhered to rigidly by all manufacturers and distributors. On November 1 the new *United States Pharmacopoeia XII* and the *National Formulary VII* will replace the previous editions as standards.

The choice of preparations to be included in *The United States Pharmacopoeia* is determined by the Committee on Scope, who make their decision chiefly on whether or not a particular preparation is of therapeutic value. This is not true of *The National Formulary.* In that book the choice of preparations is determined by the extent to which preparations are prescribed and must therefore be stocked by the dispensary pharmacist. Because certain drugs long since replaced by more effective remedies are still prescribed in large quantities, *The National Formulary* is required to set up standards for them. It is thus we find in it drugs that are not even mentioned in medical college teaching, such as Aralia (American spikenard), Areca (betelnut), Buchu, Sanguinaria (bloodroot), and true and false unicorn-root.

Great care has been taken by the Committee on Revision of *The National Formulary* to set up standards for each substance included in the book. They have done an excellent job.

By agreement, *The United States Pharmacopoeia* has preference over *The National Formulary* in the inclusion of preparations. For that reason some preparations that were present in the previous edition of *The National Formulary* are now found in *The United States Pharmacopoeia,* for example elixir phenobarbital. On the other hand, a number of pharmaceutical necessities, which include vehicles such as tinctures, elixirs, and waters, are found in *The National Formulary* having previously been in the *Pharmacopoeia.*

ARTHUR C. DEGRAFF

The Pharmacopoeia of the United States of America *(12th ed.)—New York: Mack Printing Company,* 1942. 880 pp. Price, $7.50.

It is easy for members of the public health profession to take for granted the uniformity and dependability guaranteed by the U. S. Pharmacopeia, now issued in a twelfth edition. This is truly a publication of international character of which there has been a Spanish edition for forty years. It is official in Costa Rica, Cuba, the Dominican Republic, in Nicaragua, Panama, the Philippines and Puerto Rico and is used in many other Pan American countries.

Among new U.S.P. items now official there are, among the anti-malarials, Pamaquine Naphthoate, Quinacrine Hydrochloride, Quinine Hydrochloride, Totaquine; among biological products are Human Immune Globulin, Human Measles Immune Serum, Human Scarlet Fever Immune Serum and Tetanus Toxoid new to this edition; the Sulfa drugs include Sulfapyridine, Sulfathiazole and Sulfanilamide; new antiseptics include Chloroazodin and Solution of Iodine. New in the realm of antisyphilitics are Sulfarsphenamine, Bismuth and Potassium Tartrate, Bismuth Subsalicylate and Mercuric Salicylate. Among the new vitamin preparations are Ascorbic Acid, Menadione, Nicotinamide, Nicotinic Acid, Rice Polishings, Riboflavin, and Thiamine.

Throughout the volume a commendable adjustment to new discoveries and to current limitations in drug supply is evident. REGINALD M. ATWATER

The Mental Growth of Children from Two to Fourteen Years—*By Florence L. Goodenough and Katharine M. Maurer. Minneapolis: University of Minnesota Press,* 1942. 130 pp. Price, $2.50.

As stated in the subtitle, this book is "A Study of the Predictive Value of the Minnesota Preschool Scales," and will be of greatest interest and value, as the foreword suggests, to the "careful student and professional worker in the field of mental measurement." There is, however, much of interest to the medical man who deals with children.

The Minnesota preschool scales for the study of mental development of young children have been in use for some time; they include both verbal and non-verbal scales which are scored separately. In this monograph the authors present a carefully constructed report of the development and validation of the tests which is followed by a study of their predictive value with regard to the later performance of the same children on other commonly used tests. A group of children from two to fourteen years of age was followed and retested at stated intervals. The work and statistical analyses were most carefully done. Evidence is adduced to show that mental development does not always proceed at a fixed rate, and it is suggested that there is a sex difference in the age at which the tests begin to have a predictive value. The superiority of the non-verbal scales over the verbal ones at early ages suggests to the reviewer their use with children whose acquisition of speech is delayed. These children are often brought for advice to the physician who is unable to answer

the parents' anxious question as to whether the child is mentally normal because of the inadequacy of the usual tests. The physician who, in the course of his care of young children, needs to know something of the validity of the usually administered tests, will find much of value in the brief historical survey of mental tests devised for young children.

WILLIAM S. LANGFORD

Youth Looks at Marriage—*By M'Ledge Moffett. New York: Association Press,* 1941. 48 pp. Price, $.25.

Health workers who deal with young people will find excellent material in this pamphlet, presented as a guide for discussion groups from adolescence on. The author, who is Dean of Women and Director of Home Making Education at the Radford State Teachers College, Virginia, has succeeded better than others in objectifying this difficult area of marriage and family life. A mature person can hardly read this material without regret that it was not available in his own youth. He will wish to increase the exposure of youth today to this sane approach, especially when the marriage rate touches the present peak.

REGINALD M. ATWATER

The Biological Action of the Vitamins—*Edited by E. A. Evans, Jr. Chicago: University of Chicago Press,* 1942. 227 pp. Price, $3.00.

This book contains the fourteen papers presented at the symposium on "The Biological Action of the Vitamins," held in connection with the Fiftieth Anniversary celebration of the University of Chicago, September, 1941.

The material is presented not as a complete review of the field but rather as a series of papers summarizing the recent, most active subjects, each by an author with first-hand knowledge. The purpose has been well accomplished.

After an introductory chapter on the historical developments of the subject, there follow sections dealing with the biochemistry and physiology of thiamine, riboflavin, nicotinic acid, pyridoxine, pantothenic acid, biotin, choline, phosphorus, and vitamin K. In other chapters clinical aspects have been discussed in relation to thiamine, riboflavin, nicotinic acid, pantothenic acid, and vitamin K. The book is the best single source of information on these aspects of the vitamins now available.

OTTO A. BESSEY

The Sanitary Inspector's Handbook—*By Henry H. Clay, F.R., San. I., F.I.S.E.; Major, R.A.M.C. with an introduction by Sir Wilson Jameson, M.A., M.D., F.R.C.P., D.P.H. (Lond.). (5th ed.) London: H. K. Lewis & Co., Ltd.,* 1942. 534 pp. Price, $5.25.

A book that justifies its fifth editing in a decade, four editions having been exhausted, must be meeting a real and continuing need in the social order for which it is intended. As Sir Wilson Jameson, Chief Medical Officer of the British Ministry of Health, points out in his introduction to *The Sanitary Inspector's Handbook,* "the office of Sanitary Inspector has become more highly technical and specialized within the British Empire than anywhere else in the world, and the duties for which an inspector is responsible are extremely diverse." It is for the British public health service that the book is intended.

The diverse duties for which the inspector is responsible are introduced at the begininng of each chapter by a summary of the law, so far as it concerns the inspector. There follows an explanation of the technical aspects of the requirements of the law and its by-laws which keeps in mind the second purpose of the author, namely, the preparation of his reader for the examinations that will qualify him for appointment as a sanitary inspector. To that end, systematic outlines that will impress

themselves upon the student's memory are presented, wherever possible, to cover the salient factual information that the student should possess and about which most questions will normally revolve.

This wartime edition of Major Clay's book includes in its technical portions special reference to "conservancy," the British equivalent of our more realistic "excreta disposal," and to camp and rural sanitation, and, otherwise, too, brings the technical information down to date. New legislative enactments that appear to be permanent are added, but emergency enactments that will probably disappear with return to peace are not included. A wartime objective of the book is to meet the special needs of students during the suspension of normal courses of instruction. For the reader in the Americas, *The Sanitary Inspector's Handbook*, because of its close national orientation, is primarily of interest as a reference in comparative public health administration and sanitary legislation. GORDON M. FAIR

The Family in a World at War—*Edited by Sidonie Matsner Gruenberg. New York: Harper,* 1942. 298 pp. Price, $2.50.

This is a timely volume conceived and brought to fruition by the board and staff of the Child Study Association of America. It is really a symposium of twenty well written chapters on various phases of family life in relation to the national emergency and national defense. Each chapter bears the marks of special consideration by an authority in his or her particular field. The chapters on "Children of Great Britain in Wartime," by Susan Isaacs, and "The Work of Women in England," by Martha M. Eliot, are especially challenging.

The appendix contains material that should prove very helpful in answering parents' questions as to how they should meet war conditions. This material has been assembled by the staff of the Child Study Association and the U. S. Children's Bureau. A Commission on Children in Wartime of the U. S. Children's Bureau has prepared the Children's Charter in Wartime.

The editor of this volume in the first chapter sets the stage for the chapters which follow. She is to be congratulated on bringing together so much useful material when the preservation of the family is of paramount concern.

RICHARD A. BOLT

Digest of State and Federal Laws Dealing with Prostitution and Other Sex Offenses—*Compiled under the direction of Bascom Johnson by George Gould and Roy E. Dickerson. New York: American Social Hygiene Association,* 1942. 453 pp. Price, $5.00.

Here is a loose-leaf book containing digests of all federal and state laws dealing with prostitution and other sex offenses passed, up to and including September 15, 1941. Note the word loose-leaf, for therein lies the chief value of the book. As new material is gathered from time to time by publishers and distributors the book can be easily kept up-to-date.

Dealing first with the federal laws, then the states, in alphabetical order, the *Digest* presents its material under four headings as follows: (1) Activities of Exploiter of Prostitute Prohibited; (2) Activities of Prostitute or Her Customer Prohibited; (3) Other Sex Offenses Prohibited; (4) Digest of Supplementary Laws.

If nothing more, the *Digest* offers convincing proof of the confusion existing in the minds of both the legislative bodies and the general public, and definitely shows the need for a model law which will be all-embrasive.

Of special interest are the notes on the control of the sale of alcoholic beverages as it relates to prostitution

activities, and the four appendices covering the following subjects: (1) Laws Against Prostitution and Their Use; (2) Essential Provisions of State Laws for the Repression of Prostitution; (3) Milestones in the March against Commercialized Prostitution; (4) Venereal Disease Laws and Regulations; together with information and maps on premarital and prenatal laws of several states.

Containing practical knowledge of ways and means to prevent the "wastage of human resources resulting from prostitution and the undesirable conditions which accompany this evil business," the *Digest* should prove valuable to public health workers, legislators, and research workers.

BEN F. WYMAN

A Brand New Baby—*By Margaret A. Stanger. Boston: Beacon Press,* 1942. 132 pp. Price, $1.75.

This attractive book meets a real need which many expectant mothers have experienced in trying to present to young children the important facts relative to birth and care of the newborn with normal development during the first year. The author recognizes that the arrival of a new baby in the home often presents problems in the lives of older children. She has taken into consideration that the bare facts alone do not suffice, but should be clothed for the child in the emotional medium which meets the requirements of modern child psychology.

The story begins in a normal way to interest the child and proceeds step by step to show what may be expected of a new-born baby, and what practical measures should be taken to meet its daily needs. The baby taken as a model in this story has been born in its own home and the procedures taken from the very beginning are somewhat different from those routines carried out in a modern obstetrical hospital. However, this does not detract from the pedagogical value of the presentation as a whole.

The large type printing and the charming illustrations by Pelagie Doane add a great deal to the book from the standpoint of the child. The book has been written primarily for the six and seven year old children and may be read to them at home or in the elementary grades.

The introduction announces that a guide book to accompany this volume, written by Elizabeth M. Manwell is available.

RICHARD A. BOLT

Red Cross Home Nursing—*By Lona L. Trott, R.N., B.S. Philadelphia: Blakiston,* 1942. 431 pp. Price, $.60. Cloth, $1.00.

The author of *Red Cross Home Nursing* is to be congratulated on covering for the lay reader the fields of health and sickness as capably as she has. With enthusiasm which is contagious, she introduces the reader to the essentials of healthful living and presents, step by step, practical simple procedures for the home nurse to use in caring for the sick. The author wisely refrains from being verbose on a given item but says just enough to whet the appetite of the reader to seek additional information and then she supplies a short list of books for further reading.

The only quarrel we have with this textbook is that its title does not suggest the richness of its content. In fact, approximately one half of the 390 text pages is devoted to factors related to keeping the well person well—to health promotion through individual and community effort. This reviewer makes note of what she considers a misleading title since she was particularly impressed with those units devoted to health.

There are many good points about this text. It is simple, interesting, and easy to understand. The reader is as-

sured of its soundness, for the author lists and frequently quotes her sources from accepted authorities in the various fields covered.

For the most part the text is a nontechnical presentation, but where the use of a technical vocabulary seems necessary the author defines the words in a way that the interested reader will appreciate. The illustrations are helpful. We commend the device of showing what not to do as well as what to do—in the instances where that form of motivation is employed. Finally, the busy housewife will welcome the small number of " Problems for Action " appearing at the end of each chapter. Only three or four are suggested. The fact finding activities should appeal to her and for the most part, the problems suggested are typical of ones the average individual encounters in real life situations, *e.g.*, planning a model kitchen, preparing a budget, and the like.

Red Cross Home Nursing is written, it would appear, for Mrs. John Doe and her daughters. We believe they, and even father and brother, will like the book and want to own it, for it is a veritable mine of authentic information and a reliable index for more if desired.

MARGARET REID

Sex Education in High Schools—*By John Newton Baker, M.A. New York: Emerson Books Inc.*, 1942. 155 pp. Price, $2.00.

This book presents the results of a survey showing the experiences of high schools with courses in sex education and our present situation with respect to the teaching of sex hygiene at the secondary school level. Based upon this study of opinion and experience in the field, the book presents a statement of the need, the objectives, the opposition, the methods and technics, the rôle of the teacher, the name of the course, and the benefits of sex education. It discusses the best name for the course of instruction, the question of segregating the sexes for such instruction, and the desirability of state leadership in the development of this program.

The last two chapters, entitled " The Scene Today " and " Where Do We Go from Here? " respectively, summarize the present situation and the probable next steps. In respect to all of the various topics mentioned, the book presents diverging and opposing viewpoints. It shows that the young people themselves desire such instruction and that the program has been very satisfactory and acceptable in some areas. While there are sharp differences in the attitudes of different states, the survey indicates a tendency toward more and better instruction in sex hygiene. Selected units of study and a selected bibliography are included. The book is clearly written and attractively printed. It presents a good summary of the present situation.

C. E. TURNER

People Are Important—*By Floyd Kuch, Gordon Mackenzie and Margaret McClean. Chicago: Scott, Foresman and Co.*, 1942. 283 pp. Price, $1.32.

This book is as intriguing as its title, and as important as its subject, people. Although a high school text on applied psychology, and therefore outside the usual classification of public health literature, it contains many important lessons for the health teacher and health officer. The oft repeated lament of the late Dr. John L. Pomeroy, 25 years Health Officer of Los Angeles County, " What *makes* people do as they do? " is answered as fully as can be in this book.

To no one in the community are people more important than to the health officer. Their follies and foibles manifested in bizarre health behavior, together with their energetic health progress when once aroused and organ-

ized, often leave him in a dither of alternating pride and misgiving. If the teaching units in this book should be successfully and generally adopted in the nation's high schools, it will mark the beginning of a new era for health agencies.

Of special value to public health are the chapters for the young citizen on "Learning to Think Straight," and "Getting at the Truth." Here the student is guided into a series of interesting investigations and exercises through which he learns to recognize problems, approach their solution in a logical manner, gather data which are factual, and reach conclusions based on facts, free of bias. When the majority of adults approach their personal and community health problems in this manner public health will flourish. Other sections of related importance in explaining and guiding human behavior are titled "Things that make you go and stop," "Getting into and out of emotions: Emotions are the fabric of life and living," "Getting along with others." Incidentally, it is refreshing to find a school text which recognizes the importance of learning to be good followers. Good followers are sorely needed in a country many of whose youth aspire to be leaders or they won't play.

As to format, type, and illustration, the book is a model of modern educational technic. One of the several styles of type used is aggravating to the astigmatic and presbyopic eye, but this is a minor matter to the average high school reader. One wonders if human society might not become dull if everyone succeeded in applying to the fullest extent the tolerance, understanding, wisdom, and self-control advocated herein. Like virtue, however, these are traits worth striving for, but never fully attainable. Too, heredity would doubtless preserve enough atavistic genes to spice our society with the occasional crank and misanthrope.

This book opens a new vista of hope and encouragement for the public health administrator. It is a contribution to the field of mental hygiene. It should be on the desk of every health educator.

W. P. SHEPARD

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Mister Nelson Says—Fuel oil for thirty states and 96 million persons will be restricted about a third and will be rationed. Supplementary supplies may be available for households with infants, old or sick people, but we shall have to think in terms of "discomfort zones" with a slogan "keep the home fires burning—*low*." At 65° artificial humidification of the air in the typical home is unnecessary. Reduced temperature is not injurious to healthy persons adequately clothed.

ANON. Health Aspects for (sic) Fuel Rationing. J.A.M.A. 120, 5:370 (Oct. 3), 1942.

Too Many Cooks—Conflicts between health and labor departments that have prevented an all-out attack on New Jersey's rapidly exacerbating industrial health situation are reported upon by a committee of the State Consumers League. The linen may not be exactly dirty but there just is a trace of that telltale gray.

ANON. Need for an Industrial Health Program in New Jersey. Med. Care (Quarterly). 2, 2:118 (Apr.), 1942.

On Forty-eight Fronts—Venereal disease control and other social hygiene activities of all our united states and some of the larger cities therein, is reported in heartening detail in three succeeding issues to produce a handy compendium that you may want for reference.

ANON. Social Hygiene in Wartime. J. Social Hyg. 28, 4 (*et seq.*):185 (Apr.), 1942.

When Emotional Cripples Work—One person in twenty spends part of his life in a hospital for mental disease. One in sixteen of the selectees was rejected by draft boards because of mental or nervous defects. Many of these mental cripples find their way into industry, geared now to a fast tempo. Here, then, is a problem which raises the question: what can industry do about it? The components of a successful program are discussed in this excellent paper.

CAMERON, E. S. Mental Hygiene in Industry. Pub. Health Nurs. 34, 10:54 (Oct.), 1942.

Pellagra, Obesity, Underweight, Anemia—Malnutrition does prevail in this land of plenty. Why? Among the causes are: infections, mental strain, dietary faults, ignorance, laziness, poverty, misleading food advertising, denaturing of staple foods, overconsumption of purified sugars, waste of good foodstuffs. How can these causes be corrected? Cleanse our health education of fads and selfish commercial propaganda, and make it comprehensible to the common man, says this convincing writer. He wonders how many vitamin B pills we must consume before we nurture sufficient intelligence to take one step that he proposes.

CARLSON, A. J. Food and Fitness. Sci. Month., 55, 5:403 (Nov.), 1942. (Another provocative paper by the same author.) The Challenge of Unused Human Resources. J. Am. Dietet. A. 18, 10:647 (Oct.), 1942.

For Arctic Explorers, *et al.*—Should you be that one in a thousand who goes roughing it in sub-zero weather, then be warned that even in tents and igloos, a Primus stove may generate more carbon monoxide than can escape through canvas or cracks in

the snow house. Poisoning has occurred under these conditions.

IRVING, L., *et al.* Experiments on Carbon Monoxide Poisoning in Tents and Snow Houses. J. Indust. Hyg. & Toxicol. 24, 8:213 (Oct.), 1942.

About **Minerals**—Sodium, potassium, calcium, magnesium, chlorine, iodine, phosphorus, sulphur, iron, copper, manganese, cobalt, and zinc in the human body's economy is the fairly inclusive subject of this year's Harben Lectures given at the University of Toronto.

MCCOLLUM, E. V. Inorganic Elements Which Present Nutritional Problems of Practical Importance. J. Roy. Inst. Pub. Health & Hyg. 5, 9:165 (Sept.), 1942.

Prostitution, Social Protection and the Police—Houses of prostitution and red light districts in more than 300 communities have been closed in the current wartime effort to prevent venereal infections among the armed forces. What the social protection section and the National Advisory Police Committee are doing to effect further (and still badly needed) betterment in an improving situation is recounted in this and the accompanying papers.

NESS, E. The New Offensive Along the Police Front. J. Social Hyg. 28, 7:365 (Oct.), 1942.

While Doctors Disagree—"Sister Kenny's treatment is superb nursing and common sense . . . early deformities are not seen in those cases under her care in the Minneapolis hospitals." (vs.) ". . . this method in time will take its place among the others offered by the field of physical therapy as having been tried but found wanting." You've guessed it: these are just two opinions voiced in a panel discussion on poliomyelitis. You will be well repaid for your reading of the whole series of papers.

SABIN, A. B., *et al.* Pathology and Pathogenesis of Human Poliomyelitis (and four related papers). J.A.M.A. 120, 7:506 (Oct. 17), 1942.

Almost a Quarter Finished High School—One valuable innovation of the 1940 census was the recording of information about the number of years of schooling completed by men and women over 25 years of age, by urban-rural, nativity, color, and sex status. Such data are helpful in understanding the behavior of our people as workers, consumers, voters, and beneficiaries of our health services.

SHRYOCK, H. S. 1940 Census Data on Number of Years of School Completed. Milbank Quart. 20, 4:367 (Oct.), 1942.

Not Statistics But Babies, Alive or Dead—Until the middle 20's infant death rates in urban areas were higher than rural; since that time the rural rates have been greater. City rates are lowest, but towns of 2,500 to 10,000 provide the least favorable environment for infant survival, for the town rate is 9 per cent higher than in the country areas. Extension of effective public health to small towns should save a lot of infant lives, wisely concludes this study.

SOMMERS, H. J. Infant Mortality in Rural and Urban Areas. Public Health Rep. 57, 40:1494 (Oct. 2), 1942.

What Workers Work Upon—Diets of a thousand aircraft employees—the new rich—were studied. Very few men were eating meals that meet good dietary standards. Too few colored vegetables were included, citrus fruits were neglected (and this was a Sunkist group, please note), and too little milk was drunk.

WIEHL, D. G. Diets of a Group of Aircraft Workers in Southern California. Milbank Quart. 20, 4:329 (Oct.), 1942.

Nursing for Small Industries—Twenty-two visiting nurse associations

reported upon the type of part-time nursing services they render under contract with 44 different mercantile or industrial firms. The nature of various types of service is tabulated and discussed. This would seem to be a promising but very tiny beginning of an enormous job.

WIESNER, D. E. Policies in Industrial Nursing by V.N.A.'s. Pub. Health Nurs. 34, 10:585 (Oct.), 1942.

Preschool Toxoid Treatment—Argument is presented for a reinforcing dose of unmodified diphtheria toxoid before entering school, to be administered to children immunized in infancy. A Schick-negative condition may be expected in 97 per cent of those who are so protected.

WILKEY, J. R. Diphtheria Toxoid and the Reinforcing Dose. Canad. Pub. Health J. 33, 9:446 (Sept.), 1942.

BOOKS RECEIVED

OSLER'S PRINCIPLES AND PRACTICE OF MEDICINE. By Henry A. Christian. 14th ed. New York: Appleton-Century, 1942. 1500 pp. Price, $9.50.

NUTRITION AND DIET THERAPY. Fairfax T. Proudfit. 8th ed. New York: Macmillan, 1942. 1068 pp. Price, $3.25.

COMMUNICABLE DISEASES. By Nina D. Gage and John Fitch Landon. 3d ed. Philadelphia: Davis, 1942. 458 pp. Price, $3.50.

NUTRITION AND THE WAR. By Geoffrey Bourne. 2d ed. New York: Macmillan, 1942. 148 pp. Price, $1.50.

MANUAL OF WAR-TIME HYGIENE. By Dean Franklin Smiley. New York: Macmillan, 1942. 86 pp. Price, $1.00.

WHEN DOCTORS ARE RATIONED. By Dwight Anderson and Margaret Baylous. New York: Coward-McCann, 1942. 255 pp. Price, $2.00.

FUNDAMENTALS OF PSYCHIATRY. By Edward A. Strecker. Philadelphia: Lippincott, 1942. 201 pp. Price, $3.00.

TABLES OF FOOD VALUES. By Alice V. Bradley. Revised. Peoria: Manual Arts Press, 1942. 224 pp. Price, $3.50.

REPORT OF THE COMMITTEE ON TUBERCULOSIS IN WAR-TIME. Special Report Series No. 246. London: His Majesty's Stationery Office, 1942. 36 pp. Price, 30¢.

ANALYSIS OF REPORTS OF PHYSICAL EXAMINATION. Summary of Data from 19,923 Reports of Physical Examination. Selective Service System: Washington, 1941. 31 pp.

WE FIGHT SYPHILIS AND GONORRHEA, VOLS. 1, 2, AND 3, AND TEACHER'S HANDBOOK. Adult Education Materials Project. Chicago: Chicago University Press, 1941.

MICROMAX RESISTANCE THERMOMETERS FOR MEASUREMENT AND CONTROL. Catalog N-33C. Philadelphia: Leeds & Northrup, 1942. 45 pp.

TRICHINOSIS PROBLEM IN CALIFORNIA. Report of a Survey, 1940–1941. By K. B. Kerr. Sacramento: Department of Health, 1942. 37 pp.

PUBLIC HEALTH IN MANITOBA, 1941. Report of Study made by the American Public Health Association, 1942.

THE ROCKEFELLER FOUNDATION. International Health Division, Annual Report, 1941. 1942.

ASSOCIATION NEWS

Felix Joel Underwood, M.D.
President-Elect

DR. FELIX JOEL UNDERWOOD, State Health Officer of Mississippi, was chosen President-Elect of the Association at the 71st Annual Meeting in St. Louis, Mo., in October. Dr. Allen W. Freeman, Professor of Public Health Administration, Johns Hopkins University, Baltimore, Md., was inducted into office as President. Dr. John L. Rice, Consultant to the New York City Department of Health, retired as President.

Dr. Underwood was born in Nettleton, Miss. He took his M.D. degree at the University of Tennessee in 1908, and thereafter practised medicine and served as part-time Health Officer of Monroe County, Miss., and finally as Director of the Monroe County Health Department until 1920. In 1921 he became Director of the Bureau of Child Hygiene of the Mississippi State Board of Health, and in 1924 State Health Officer.

Dr. Underwood has served, or is now serving, on many boards, commissions and conferences, including the Board of Directors of the Standard Life Insurance Company, the Executive Committee of the State Board of Public Welfare, the Board of Trustees of the Mississippi State Tuberculosis Sanatorium, the White House Conference on Child Health and Protection, and the National Malaria Committee. He has served as a member of the Board of Scientific Directors of the Rockefeller Foundation, and of the Public Health Committee of the Commonwealth Fund; he is a member of the Advisory Committee of the National Organization for Public Health Nursing. The Mississippi State Medical Association, the Southern Medical Association and the Conference of State and Provincial Health Authorities have honored him with the office of President.

FELIX JOEL UNDERWOOD, M.D.

Dr. Underwood was elected to membership in the Association in 1924, and to Fellowship in 1934. Since 1941 he has been a member of the Executive Board. He is Chairman of the Conference Committee between the Conference of State and Territorial Health Officers and the A.P.H.A. Committee on Professional Education, under whose guidance the significant Merit Systems Project is being developed.

Sedgwick Memorial Medal for 1942 Awarded to Dr. C.-E. A. Winslow

THE award was made on October 27, 1942, during the Seventy-first Annual Meeting of the American Public Health Association in St. Louis, Mo., by Haven Emerson, M.D., Chairman of the Sedgwick Memorial Medal Committee. In presenting the medal, Dr. Emerson said:

"Charles-Edward Amory Winslow, friend of the poor and disadvantaged, standard bearer of Christian ideals in human relations, persistent searcher for the truth of causes and effects of human survival at ever higher levels, we greet you with an enduring affection for those very qualities of heart and mind that made the name of Sedgwick symbolic of the social application of biology.

"On the part of the committee authorized to make the award, I hand you this golden token that serves perennially to express our belief that the best that man has already done can and will be bettered by the loyal disciples of great teachers of thought and science of opinion and fact."

In accepting the award, Dr. Winslow said:

"I cannot tell you how deeply I appreciate this honor which you have conferred upon me. It means much because it comes from the American Public Health Association—the comradeship in which I have labored to the best of my ability for forty years—the brotherhood in whose achievements I have always felt a deep and a proud satisfaction. It is doubly precious because it comes by the hand of Haven Emerson whom I have honored and loved as a gallant and devoted leader in our common tasks. Above all, however, I prize this award because it links my name for the moment with the name of one who was not only a great teacher but something much more vital and intimate. A superior in the church is known as one's 'Father in God.' To those of us who were intimately associated with him, Sedgwick was our Father in the Spirit.

"After all, the purpose of this award is not primarily to place each year a crown on the brow of a more or less worthy recipient. It is to keep the laurel green on the memory of a great pioneer in American public health and, above all, a human being whose personality, whose soul, was far more signifi-

C.-E. A. WINSLOW, DR.P.H.

cant than any or all of his concrete achievements. There are not many in this hall who enjoyed so fully the privilege of his companionship as did Mrs. Winslow and I. We were both his pupils. We met in his laboratory. We labored by his side in the department for twelve years. We see his face and hear his voice tonight. We hope always to keep burning the torch which he lighted.

"Intellectually, Sedgwick, as a pupil of Martin, the associate of Huxley, was a child of the Victorian day—a day whose serene spaciousness, scientific reasonableness, and warm humanitarianism seems in these dark hours like some remote Golden Age of human history. Yet he had in him, too, a strong and essential mixture of the Puritan. He was never lulled into slackness by faith in automatic perfectionism. He knew that the world was a hard world and that progress comes only by ceaseless effort. He was alert to the call of duty 'stern daughter of the Voice of God.' The motive power in every hour of his life was service. He almost never used the word; but he made the tacit assumption that the aim of every human being was to 'leave the world better and happier than he found it.' After one long and intimate talk with me he said, 'Well, Winslow, I think you can be a very useful man.' Not a rich man, not a successful man—a useful man.

"This is perhaps, more than any other, the attitude of mind that we must cultivate today. Not only in the winning of the war but in the even harder task of winning a durable peace, intelligent practical coöperation between man and man, between nation and nation, for the upbuilding of a better world is the task we must achieve.

"As recipient of the Sedgwick Medal in 1942 I stand here not in any merely personal capacity but as the representative of all of you who make up the brotherhood of public health. On your behalf, as well as on my own, I accept the challenge of Sedgwick's spirit and pledge our utmost efforts in meeting the most urgent crisis in the history of human civilization."

FELLOWS AND LIFE MEMBERS ELECTED AT ST. LOUIS ANNUAL MEETING

The Governing Council at its meetings in St. Louis, during the 71st Annual Session of the Association, upon recommendation of the Sections and the Committee on Eligibility, elected 133 new Fellows, 3 Honorary Fellows, namely, William Mowll Frazer, M.D., O.B.E., M.Sc., Medical Officer of Health of the City and Port of Liverpool, England, and Professor of Public Health at the University of Liverpool; E. R. A. Merewether, M.D., M.R.C.P., F.R.S., His Majesty's Medical Inspector of Factories, Ministry of Labor, London; and Sir John Boyd Orr, M.D., F.R.S., LL.D., Director, The Rowett Research Institute, Bucksburn, Aberdeenshire, Scotland.

Six life members of the Association were elected at the same time, namely, Muriel F. Bliss, C.P.H., Attleboro, Mass.; Marguerite F. Hall, Ph.D., Division of Hygiene and Public Health, University of Michigan; Wilton L. Halverson, M.D., Dr.P.H., Los Angeles County Health Officer, Los Angeles, Calif.; Edward A. Piszczek, M.D., Health Officer, Cook County Public Health Unit, Chicago, Ill.; David A. Van der Slice, M.D., Division of Hygiene and Public Health, University of Michigan, Ann Arbor, Mich.; and Robert G. White, M.D., Director, Division of Preventable Díseases, State Department of Health, Bismarck, N. D.

OFFICERS, 1942–1943

President, Allen W. Freeman, M.D., Baltimore, Md.
President-elect, Felix J. Underwood, M.D., Jackson, Miss.
Vice-Presidents, Alice Hamilton, M.D., Hadlyme, Conn.
Felix Hurtado, M.D., Havana, Cuba
Frederick W. Jackson, M.D., D.P.H., Winnipeg, Man.
Treasurer, Louis I. Dublin, Ph.D., New York, N. Y.
Executive Secretary, Reginald M. Atwater, M.D., New York, N. Y.
Chairman of Executive Board, Abel Wolman, Dr.Eng., Baltimore, Md.

NEW ELECTIVE MEMBERS OF THE GOVERNING COUNCIL WITH TERMS EXPIRING IN 1945

Gaylord W. Anderson, M.D., Washington, D. C.
Margaret G. Arnstein, R.N., New York, N. Y.
E. L. Bishop, M.D., Chattanooga, Tenn.
Walter H. Brown, M.D., San Francisco, Calif.
V. M. Ehlers, C.E., Austin, Tex.
Selskar M. Gunn, New York, N. Y.
James P. Leake, M.D., Washington, D. C.
Arthur P. Miller, C.E., New York, N. Y.
Alton S. Pope, M.D., Boston, Mass.
Huntington Williams, M.D., Baltimore, Md.

NEW MEMBERS OF THE EXECUTIVE BOARD

James A. Doull, M.D., Cleveland, Ohio—1945
Charles F. Wilinsky, M.D., Boston, Mass.—1944
Abel Wolman, Dr.Eng., Baltimore, Md.—1945

THE ST. LOUIS MEETING

ELSEWHERE in this issue an attempt is made to bring to *Journal* readers the flavor of the 71st Annual Meeting in St. Louis, October 27–30, through a stenotypist's report, only slightly edited, of the meeting's final session. This was announced under the title "Highlights of the 71st Annual Meeting," and the participants in the panel were members of the Editorial Staff and of the Editorial Board of the *American Journal of Public Health.* The panel leader was Dr. Reginald M. Atwater.

The discussions convey the scientific atmosphere and point up the many matters with which public health workers are concerned in this war year. Because the most important feature of any meeting is the audience, we supplement the transcript of the "Highlights" session with facts and figures about the people who attended the Annual Meeting.

The total registration was 2,636. Every state in the Union was represented, many by more individuals than in any recent year. There were 38 from California, and 10 from Washington, for example. Missouri, as would be natural, stands highest numerically, with 627 registered delegates. Illinois is next

with 394, New York third with 239, and Michigan fourth with 139. Thereafter, the numbers drop, but only 6 states show less than 5 registrants each.

Mexico sent 18 delegates; Chile and Panama, 3 each; Bolivia, Colombia, Peru, Uruguay, Cuba, Costa Rica, 2 each, and Ecuador, Guatemala, Honduras, Brazil, Paraguay, and Haiti, 1 each.

Delegates from Canada numbered 32, from England 3, from Bermuda 1, from Scotland 1, and 1 delegate came from each of our own territories.

The United States Army, Navy, U. S. Public Health Service, Children's Bureau, Office of Defense Health and Welfare Services, Office of Civilian Defense, and many other federal official and national unofficial agencies were represented.

Fifteen related organizations and conference groups met with the Association.

The Ninth Institute on Public Health Education, with a faculty of 65, enrolled 278 registrants.

Altogether there were held 176 sessions, group conferences, breakfasts, luncheons, and dinners, addressed by 397 speakers. All were well attended. The Annual Banquet brought together 778 guests.

Eighty scientific exhibit booths were occupied, lining on both sides the Promenade around Convention Hall in the Municipal Auditorium. These, and the 79 technical exhibit booths in Convention Hall itself, presented perhaps the most impressive exposition the Association has sponsored to date.

Resolutions of appreciation to the Local Committee and to its Chairman, Dr. Joseph F. Bredeck, were adopted.

RESOLUTIONS

THE following Resolutions were unanimously adopted by the Association at the Seventy-first Annual Meeting in St. Louis, Mo., October 29, 1942.

1. APPRECIATION TO DR. BREDECK AND THE LOCAL COMMITTEE

RESOLVED that the American Public Health Association expresses its grateful appreciation to the St. Louis Local Committee and to the agencies and individuals represented thereon.

RESOLVED that the thanks of the officers and members be extended to Dr. Joseph F. Bredeck, Health Commissioner of St. Louis and Chairman of the Local Committee, and to the chairman and members of the several subcommittees, whose services have contributed so markedly to its success.

2. APPRECIATION TO THE ST. LOUIS HEALTH DIVISION

RESOLVED that the American Public Health Association expresses its thanks to the St. Louis Health Division and its personnel for their valuable assistance in the conduct of the Seventy-first Annual Meeting.

3. APPRECIATION TO THE LADIES' ENTERTAINMENT COMMITTEE

RESOLVED that the American Public Health Association expresses its appreciation to the Ladies' Entertainment Committee for their gracious hospitality and their many courtesies extended to the delegates, and be it further

RESOLVED that our thanks be extended to Mrs. Martin J. Glaser, Chairman, and Mrs. Joseph C. Peden, Vice-Chairman of the Ladies' Entertainment Committee for their thoughtfulness in our behalf.

4. APPRECIATION TO THE ST. LOUIS CONVENTION BUREAU AND TO THE ST. LOUIS AUDITORIUM

RESOLVED that the American Public Health Association acknowledges its gratitude to the St. Louis Visitors' Convention Bureau and to the Municipal Auditorium and their personnel for their splendid coöperation in

making such excellent facilities available for the Seventy-first Annual Meeting.

5. APPRECIATION TO THE PRESS

RESOLVED that the American Public Health Association acknowledges its indebtedness to the press, national, state, and local, for its service in connection with the Seventy-first Annual Meeting.

6. APPRECIATION TO EXHIBITORS

RESOLVED that the American Public Health Association expresses its grateful appreciation to the friends and coöperators who have presented at its Seventy-first Annual Meeting the excellent exhibits, both scientific and technical, which are of such great interest and value to the public health profession.

7. THANKS TO HOTELS

RESOLVED that the American Public Health Association expresses its appreciation to the hotels in St. Louis for their assistance in the conduct of the Seventy-first Annual Meeting.

8. WARTIME MATERNAL AND CHILD HEALTH

WHEREAS the war has created many conditions that endanger the lives and well-being of infants and children, including particularly life in crowded, unfit dwellings and communities, lack or inadequacy of child health services and medical and hospital care for sick children, crowded maternity wards and dangerously crowded nurseries for new-born infants, and inadequate maternity care, resulting in too early discharge of women and their infants from hospital, and

WHEREAS in many places, as the population has grown rapidly because of war industries or military establishments, the provision of health and medical service has not kept pace, and

WHEREAS many thousands of women are being drawn into war production industries or into work on farms or into domestic service, including mothers of young children, with the resulting need for special health and welfare services for children, and

WHEREAS boys and girls of secondary school age are seeking work in factories or farms, in many cases work that taxes their physical strength and endurance and affects their emotional and social stability, and

WHEREAS the changes in family and community life created by the war, especially the absence of the father from the home, are causing many additional emotional and social problems among children and youth with resultant increase in delinquency, and

WHEREAS the morale of the men in the armed forces depends in no small degree on the knowledge of the health and well-being of their wives and children at home, therefore be it

RESOLVED that the American Public Health Association go on record as urging: (1) that immediate attention be given by appropriate public and private health agencies to the expansion in all practical ways of programs of maternity care and health service and medical care for children, especially those in areas affected by war industries and military establishments; (2) that attention be directed to the health and medical services, including mental hygiene, required for children of working mothers and for adolescents and youth who are about to leave school for work or are already employed in war industries, on farms or in other essential service trades; and (3) that special attention be given to making available adequate provision for maternity care of the wives of men in the military services and for health and medical service for their children.

9. ON MERIT SYSTEMS

WHEREAS the indefinite professional status and insecure tenure of employment of public health personnel in many health jurisdictions of the United States has been a serious handicap to the recruitment and retention of qualified personnel, and

WHEREAS, notwithstanding the serious obstacles that arise from the war emergency, substantial progress has been made toward acceptable systems of personnel administration on a merit basis, therefore be it

RESOLVED that the American Public Health Association reaffirm its faith in a properly conceived and administered system of personnel administration and that we urge the appropriate federal, state, and local health officials to perfect and extend those systems now in existence and in the course of development; and be it therefore

RESOLVED that professional qualifications be upheld for those persons seeking permanent status and that, when the emergency becomes so acute that inadequately trained personnel must be employed, such personnel be placed on temporary appointment in special grades below those which the position would normally rate.

10. LOCAL HEALTH UNITS

WHEREAS, the immediate emergencies of wartime and the continuing necessities of a nation at peace require health protection for all within our boundaries, and

WHEREAS, the most effective state and national health services can be provided only when all communities have accepted the responsibility of applying the science and art of preventive medicine as a permanent function of local civil government, therefore be it

RESOLVED that all practical measures be taken by the officers and the Executive Board of the American Public Health Association to promote the creation and adequate support of health services by local government throughout the United States and Canada to the end that no community of our people shall be left without the public care which can be best supplied only through full-time trained medical officers of health with sufficient numbers of qualified assistant personnel, and be it further

RESOLVED, that collaboration with other professional, official and voluntary organizations be sought to obtain total coverage of these nations by local health units at the earliest practicable date.

11. CONTINUED TRAINING OF PUBLIC HEALTH PERSONNEL

WHEREAS the present emergency puts unprecedented demands upon public health personnel, and

WHEREAS the war period is presenting serious and numerous problems requiring exceptionally well trained professional public health personnel, and

WHEREAS it would be reasonable to expect that this situation will be aggravated during the post-war period, now therefore be it

RESOLVED that all health agencies be urged to make every possible effort to continue the professional training of all types of personnel, utilizing to the fullest extent funds available from all sources.

12. NUTRITION

WHEREAS the importance of upholding health standards has assumed new significance during the war, and

WHEREAS we have come to a new realization of the importance of adequate diet, therefore be it

RESOLVED that it is an important function of any health agency, including the schools, to take every step toward providing the adult as well as the child population with a properly balanced diet, taking full advantage of the systems available through the U. S. Department of Agriculture in the establishment of suitable school lunch and school milk programs.

13. MORBIDITY NURSING

WHEREAS the dislocation of considerable segments of the population and the dislocation of physicians, nurses, and dentists emphasizes the desirability of extending nursing care to the sick in their homes, and

WHEREAS the accomplishment of this objective in many areas may now be possible through the coördination of all public health nursing services, including the full utilization of auxiliary services, therefore be it

RESOLVED that the American Public Health Association endorse the principle that nursing care of the sick in their homes should be an integral part of a community public health nursing program.

RESOLUTION FROM LATIN AMERICAN SANITARY ENGINEERS AT ANNUAL MEETING

At the banquet session of the 71st Annual Meeting of the Association held in St. Louis, Mr. Luis Pachon Rojas, Sanitary Engineer of the Ministry of Health and Labor of the Republic of Colombia, and on behalf of all the Latin American sanitary engineers in attendance at St. Louis, presented the following resolutions:

"The Latin American Sanitary Engineers attending the 71st Annual Meeting of the American Public Health Association in St. Louis, Mo., have unanimously approved the following motions: 1st: To express our deepest gratitude to the Pan American Sanitary Bureau for the kind invitation to attend the 71st Convention of the American Public Health Association and also for the timely opportunity to meet most of the outstanding men engaged in public health activities in this country. 2nd: To voice our sincere appreciation to the American Public Health Association for the hearty welcome that was extended to us on this occasion which demonstrates the community of ideals that reigns among those who are devoting their efforts to the welfare of the people of this hemisphere. 3rd: To thank the Conference of

State Sanitary Engineers and the Conference of Municipal Public Health Engineers for their generous gesture in extending to us the privilege and high honors of membership in their organization and to assure them our fullest collaboration in the solution of the inter-American sanitary engineering problems and the complete support of our group."

A sustained round of applause greeted the presentation of these resolutions and a rising vote of appreciation was accorded the visitors at the suggestion of Harry S. Mustard, M.D., the presiding officer.

DELEGATION FROM MEXICO AT ST. LOUIS A.P.H.A. MEETING

The delegation from Mexico at the 71st Annual Meeting of the Association in St. Louis in October was headed by Dr. Angel de la Garza Brito, Dean of the School of Hygiene and Public Health in Mexico City. Also in attendance were Dr. Manuel Gonzalez Rivera, the Supervisor General and the Chief of the technical staff of the Federal Department of Health, Mexico City.

From the Bureau of Venereal Diseases were Dr. Enrique Villela, Chief of the Federal Bureau, Dr. Juan L. Soto, the Director of the Federal District Bureau, and Dr. Samuel Villalobos. Carlos Lopez Fuentes was in attendance, representing the public health engineers from the Federal Bureau of Sanitary Engineering.

LATIN AMERICAN COUNTRIES REPRESENTED AT A.P.H.A. MEETING

Among those in attendance at the 71st Annual Meeting in St. Louis were sanitary engineers from several Latin American countries, present as guests of the Pan American Sanitary Bureau. Included in this list were the following sanitary engineers from the countries indicated:

F. A. Aragon, Costa Rica
Angel Balcarcel, Guatemala
Julio Caballero, Chile
Ruperto Casanueva, Chile
Felipe de Santiago, Uruguay
Gerald Ewald, Haiti
Carlos Lopez Fuentes, Mexico
Carlos Guardia, Panama
Julio Jauregui, Bolivia
Luis Mantilla, Peru
Renan Mendez, Costa Rica
Sergio Palacios, Honduras
Louis Pachon Rojas, Colombia

Accompanying the visitors were the following officials connected with the Pan American Sanitary Bureau.

Dr. E. C. Ernst, *Assistant Director*
J. Corigliano, *Fiscal Officer*
E. D. Hopkins, *Sanitary Engineer*
W. N. Dashiell, *Sanitary Engineer*
Dr. A. A. Moll, *Secretary*
Dr. John R. Murdock, *Traveling Representative.*

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Frank M. Baker, M.D., East Side Health District, East St. Louis, Ill., District Asst. Epidemiologist, State Public Health Dept.

Caroline H. Callison, M.D., Coosa County Health Officer, Rockford, Ala.

H. L. Chambers, M.D., City Hall, Lawrence, Kan., Director, Douglas County Health Unit

Everett H. Ellinwood, M.D., P. O. Box E, Snow Hill, N. C., Epidemiologist and Health Officer, State Board of Health

Floyd W. Highfill, M.D., Box 308, Duncan, Okla., Director, Stephens County Health Dept., State Health Dept.

S. H. Kash, M.D., 4523 S. Sheridan Drive, Cudahy, Wis., Health Officer

Leslie W. Knott, M.D., M.P.H., 216½ E. Monroe St., Springfield, Ill., Asst. Chief, Div. of Local Health Admin., State Dept. of Public Health

Louis G. Llewelyn, M.D., Deputy State Health Officer, Pocomoke City, Md.

James L. Mudd, M.D., 634 N. Grand Blvd., St. Louis, Mo., Tuberculosis Controller, Health Division, City of St. Louis

Joseph T. Nardo, M.D., Fayette County Health Dept., Somerville, Tenn., Director

Edgar W. Norris, M.D., Garden Apts. 5-F, Baltimore, Md., U. S. Public Health Service, Liaison Officer, Army 3rd Service Command

Sidney Olansky, M.D., City-County Clinic, 700 W. 10th St., Jacksonville, Fla., Asst. Surgeon (R), U. S. Public Health Service

Maurice A. Roe, M.D., B.M.A. Bldg., Kansas City, Mo., Surgeon, U. S. Public Health Service

Bernard A. Schwartz, M.D., 1119 Carew Tower, Cincinnati, Ohio, Heart Consultant, Cincinnati Health Dept.

Oliver P. Sizemore, M.D., Box 388, Durant, Okla., Director, Bryan County Health Dept.

John A. Urban, D.D.S., 1537 S. Grand Blvd., St. Louis, Mo., Supervisor, Municipal Clinics

Charles L. Williams, Jr., M.D., Craven County Health Dept., New Bern, N. C., Asst. Surgeon, U. S. Public Health Service

James E. Wolfe, M.D., City Hall, Wichita, Kan., Director of Public Welfare

Major William J. Wood, M.C., 6 Detachment, RCAMC, Queen St., Halifax, N. S., District Hygiene Officer, Canadian Army

Laboratory Section

Casper G. Burn, M.D., 726 Ocean Ave., Brooklyn, N. Y., Dept. of Pathology, Long Island College of Medicine

Roy F. Gilley, Jr., B.S., 101 Spring St., Hartford, Conn., Sanitary Chemist, State Health Dept.

Sister Anna Catherine Lawlor, Ph.D., College of St. Elizabeth, Convent Station, N. J., President

Vital Statistics Section

Jesse B. Lasater, 4941 Arsenal St., St. Louis, Mo., Deputy Registrar, Bureau of Vital Statistics

Engineering Section

Domenic Capone, B.S., State Health Dept., Elkton, Md., Asst. Public Health Engineer, U. S. Public Health Service, States Relations Division

Robert P. Cherry, B.S., 3200 W. Douglas, Wichita, Kan., County Sanitary Engineer, Sedgwick County Health Dept.

William W. Cormack, B.S., 304 Essex Bldg., Norfolk, Va., Supervising Sanitary Engineer, State Dept. of Health

Wilbur S. Feagan, B.S., 300 W. Armour, Ellison Hotel, Kansas City, Mo., Consultant Public Health Engineer, City Health Dept.

Walter C. Hamblett, B.S., 922 N. 16th, Apt. 2, Fort Smith, Ark., Asst. Public Health Engineer, U. S. Public Health Service

Lieut. John C. Oliver, Jr., S.C., Headquarters, MRTC, Camp Barkeley, Tex., U. S. Army, Sanitary Corps

Industrial Hygiene Section

Francis E. C. Ballard, M.D., M.P.H., 1521 Masonic Ave., San Francisco, Calif., Medical Officer, Bureau of Industrial Health, State Dept. of Health

Robert M. Heilman, M.D., 1822 Campbell, Topeka, Kan., Director of Industrial Hygiene, State Board of Health

Hedwig S. Kuhn, M.D., 112 Rimbach, Hammond, Ind., Ophthalmologist

Samuel M. Peck, M.D., National Institute of Health, Bethesda, Md., Surgeon (R), U. S. Public Health Service

Jack C. Varley, 1200 Switzer Ave., St. Louis, Mo., Vice-President in charge of General Production, Baird & McGuire, Inc., Manufacturing Chemists

Food and Nutrition Section

Rosilyn B. Frank, 49 Ellsworth Rd., Larchmont, N. Y., Chairman, Nutrition Committee, Westchester County War Council

Evelyn Hollen, M.S., 3823 University Ave., Des Moines, Iowa, Nutritionist, State Dept. of Health

Icie Macy Hoobler, Ph.D., 660 Frederick St., Detroit, Mich., Director, Research Laboratory, Children's Fund of Michigan

Joseph H. Perkins, M.S., 530 Cedar Lane, Swarthmore, Pa., Chief Chemist and Director of Control Div., Charles E. Hires Co., Philadelphia, Pa.

William A. Sodeman, M.D., 1430 Tulane Ave., New Orleans, La., Professor of Preventive Medicine, Tulane University, Medical School

Paul H. Tracy, Ph.D., 104 Dairy Manufacturers, Urbana, Ill., Professor of Dairy Manufacturing, Univ. of Illinois

Irma F. Tual, M.S., 726 Jackson Place, Washington, D. C., Home Economics, Director, National Assn. of Food Chains

Maternal and Child Health Section

Zelly C. Alpert, D.D.S., 70 College St., New Haven, Conn., School Dentist, in charge of Dental Clinic, New Haven Dept. of Health

M. Eleanor Blish, M.D., State Bureau of Health, Augusta, Me., Director, Div. of Maternal and Child Health

Mary B. Cook, M.D., 700 Broad St., Nashville, Tenn., Acting Director, School Health Service

Irma C. Vogel, R.N., 424 S. Kickapoo St., Lincoln, Ill., Consultant Nurse for Maternity Hospitals, Div. of Maternal and Child Hygiene

Public Health Education Section

Margaret B. Cowdin, 1129½ S. 2nd, Springfield, Ill., Supervisor of Health Education, State Dept. of Public Health

John L. C. Goffin, M.D., 1134 N. Hudson Ave., Hollywood, Calif., Supervisor of Health Education, Los Angeles City Board of Education

Mary E. Matthews, B.S., 507 N. Wilmington St., Raleigh, N. C., Laboratory Technologist, Malariology Dept., State Laboratory of Hygiene

Frieda Schicht, Room 3, Municipal Courts Bldg., St. Louis, Mo., Chief of Secretarial Service and Public Health Education, St. Louis Health Div.

Susan M. Tully, A.B., 25 Blossom St., Boston, Mass., Director of Health Education, Boston Health Dept.

Public Health Nursing Section

Florence E. O. Anderson, 4643 Lindell Blvd., St. Louis, Mo., Staff Nurse, Municipal Visiting Nurses

Helene M. Bonneau, R.N., 910 S. 6th, Ponca City, Okla., Supervisor, Creek County Health Dept.

Ida E. Borth, Room 35, Municipal Courts Bldg., St. Louis, Mo., District Supervisor, Municipal Visiting Nurses

Myrtle T. Cross, R.N., Tuberculosis Study, Franklin, Tenn., Supervising Nurse, State Dept. of Health

Marion A. Curtis, B.S., Court House, Billings, Mont., Supervisor, Public Health Nursing, Yellowstone County Public Health Service

Phyllis P. Harris, M.S., 121 Millard Hall, Univ. of Minnesota, Minneapolis, Minn., Instructor

Marguerite L. Hays, R.N., B.S., Marion County Health Dept., Fairmont, W. Va., Supervising Nurse

Mary I. Humphreys, R.N., 5455 Delmar, St. Louis, Mo., Teaching Supervisor, Municipal Visiting Nurses

Margaret A. Lagerstrom, R.N., 655 Columbia Pike, Franklin, Tenn., County Health Nurse, Williamson County Health Dept.

Petronilla R. Madden, R.N., B.S., 4250 Neosho, St. Louis, Mo., Special Supervisor, Communicable Disease and Tuberculosis Nursing Service

Lucille May, R.N., 5022a Tholozan, St. Louis, Mo., Field Supervisor, Municipal Visiting Nurses

Freddy-Jane Moser, R.N., B.S., 712 S. 9th St., Pocatello, Ida., Public Health Nurse, Bannock County Health Unit

Stella A. Piotrowski, R.N., 3411 Evaline, Hamtramck, Mich., Acting Director, St. Francis Hospital School of Nursing

Marie D. Richardson, B.S., 1318 Owyhee St., Boise, Ida., Staff Nurse, City-County Health Unit

Rose C. Schauer, R.N., 6229 Clifton Ave., St. Louis, Mo., Supervisor, Maternal and Child Health Nursing Service, Municipal Visiting Nurses

Catherine E. Sheckler, M.A., 64 Pearl Drive, Greenlee Village, Pittsburgh (10), Pa., Director, Public Health Nursing, Duquesne Univ.

Dorothy E. Sitton, R.N., 4404 Laclede, St. Louis, Mo., District Supervisor, Municipal Visiting Nurses

Bertha Smith, R.N., 8501 Drury Lane, St. Louis, Mo., Supervisor, Municipal Visiting Nurses

Katherine E. Terry, R.N., 3855 Hartford, St. Louis, Mo., Field Supervisor, Municipal Visiting Nurses

Janet I. Tidrick, A.B., 1269 Topeka Blvd., Topeka, Kan., Consultant, State Health Dept.

Wilma A. Tingen, R.N., 1803 Pine, St. Louis, Mo., District Supervisor, Municipal Visiting Nurses

Ann Vanek, R.N., B.S., 2643 Oregon, St. Louis, Mo., Supervisor, Parochial School Hygiene Nursing Service, Municipal Visiting Nurses

Epidemiology Section

David Bodian, M.D., 1901 E. Madison St., Baltimore, Md., Assoc. in Epidemiology, Johns Hopkins Univ.

Howard A. Howe, M.D., 1901 E. Madison St., Baltimore, Md., Assoc. Professor of Epidemiology, Johns Hopkins School of Hygiene and Public Health

Unaffiliated

John V. Lawrence, M.D., 507 S. Euclid Ave., St. Louis, Mo., Director of Washington University Clinics

Marietta B. Tawney, M.A., 502 W. Marie St., Urbana, Ill., Co-Chairman, Illinois State-Wide Committee

EMPLOYMENT SERVICE

The Association Employment Service seeks to bring to the attention of appointing officers the names of qualified public health personnel and to act as a clearinghouse on employment. This is a service of the Association conducted without expense to the employer or employee.

From the registry of persons available, selected announcements are published from time to time. Appointing officers may obtain lists of all registrants on request.

Address all correspondence to the Employment Service, American Public Health Association, 1790 Broadway, New York, N. Y.

POSITIONS AVAILABLE

U. S. CIVIL SERVICE COMMISSION. Public Health Nursing Consultants, 5 grades. See November *American Journal of Public Health*, or write U. S. Public Health Service, Washington, D. C.

Merit System Council, Oregon State Board of Health and Crippled Children's Division, has announced merit examinations in practically all public health fields. See November *American Journal of Public Health*, or write H. J. Sears, Merit System Supervisor, P. O. Box 88, Portland, Ore.

Indiana State Personnel Division announces that applications may be filed for positions in orthopedic nursing, medical positions (5 classes), and local public health director. See November *American Journal of Public Health*, or write Indiana State Personnel Division, 141 South Meridian Street, Indianapolis, Ind.

Physician, man or woman, as director of Division of Maternal, Child and School Hygiene in southern city department of health. Woman physician with pediatric training preferred, public health experience not essential. To operate prenatal, infant and preschool clinics and promote school health program. Salary commensurate with ability and qualifications of applicant. Apply **Box J**, Employment Service, A.P.H.A.

Southern state department of health seeks several obstetric and pediatric consultants, requiring a minimum of a year's residency in a specialty, immunity to draft and preferably training in public health. Men and women are eligible. Salary $300 per month plus travel. Apply **Box C**, Employment Service, A.P.H.A.

Public Health Engineer and director of Division of Sanitation of a city and county health unit; population 145,000 in the Midwest. Salary $3,180 and travel allowance. **Box E**, Employment Service, A.P.H.A.

The Flint Civil Service Commission will consider applications for Executive Health Officer of the Flint Department of Health. Applicants must be medical graduates with a valid license to practise medicine in Michigan or eligibility for such license; also must have practised medicine and surgery for five or more years and had considerable experience in public health work. There will be no written test, qualifications being judged solely from review of experience, education and training and an oral examination. Present incumbent is on military leave of absence under circumstances which will probably extend for a period of five years. Staff consists of over fifty professional and technically trained employees. Probable salary $5,400. Inquiries should be directed to Foster B. Roser, Director, Flint Civil Service Commission, City Hall, Flint, Mich.

The Alaska Merit System announces the following positions:

Position	*Salary per month*
Assistant Commissioner of Health	$500 to $625
Maternal and Child Health Director	380 to 455
Director, Division of Public Health Engineering	290 to 335
Sanitarian, Senior Grade	215 to 245
Sanitarian	185 to 215
Bacteriologist, Senior Grade	290 to 335
Bacteriologist, Junior Grade	215 to 245
Laboratory Technician	185 to 215
Public Health Nurse	185 to 215

Appointments are being made on a provisional basis with examinations following when the staff is more adequately completed.

Apply to W. H. Matthews, Jr., Alaska Merit System, Box 201, Juneau, Alaska.

MEDICAL OFFICERS NEEDED—TENNESSEE VALLEY AUTHORITY

The Tennessee Valley Authority is in urgent need of medical officers who are not eligible for military service and who are willing to accept assignments to war industrial activities (construction, manufacture of war chemicals and manufacture of hydroelectric power) as their participation in the all out war effort. Responsibilities include physical examinations, industrial hygiene, care of injuries, med-

ical care to families in remote construction areas and general public health responsibilities in construction camps and villages.

Salary ranges from $3,200 to $4,200 per annum with opportunity for promotion.

For further information write to Dr. E. L. Bishop, Director of Health, Tennessee Valley Authority, Chattanooga, Tenn., or to the Personnel Department, Tennessee Valley Authority, Knoxville, Tenn.

FOR OTHER POSITIONS AVAILABLE SEE NOVEMBER AMERICAN JOURAL OF PUBLIC HEALTH OR WRITE EMPLOYMENT SERVICE, AMERICAN PUBLIC HEALTH ASSOCIATION, 1790 BROADWAY, NEW YORK, N. Y.

POSITIONS WANTED

In view of the current active demand for trained and experienced persons in public health it is suggested that prospective employers communicate directly with the Employment Service, American Public Health Association, 1790 Broadway, New York, N. Y., for up-to-date lists of applicants.

Advertisement

Wanted—Public Health Nurses

(a) Experienced, to carry out generalized public health program and to do such medical work as will meet emergency needs in absence of medical practitioner; some teaching; Alaska; $2,300; transportation furnished from Seattle; (b) Public health nurse to supervise staff of public health nurses, county district; midwestern college town; (c) Public health nurse for field position; county population, $1,500; Midwest; (d) Public health nurse, generalized program, experience in rural public health nursing desirable; Pacific northwest. PH11-1. Medical Bureau (Burneice Larson, Director), Palmolive Building, Chicago.

Wanted

(a) Physician for important position, venereal disease program; Islands; must be unmarried or able report without family. (b) County health officer; northern California. (c) Assistant director, school of health, public schools; midwestern metropolis. (d) Woman physician for field position; state department of health; should be effective public speaker; will provide health training if not trained; Midwest. (e) Director; maternal, child, and school hygiene department; pediatric training desirable; public health experience unnecessary; salary commensurate with qualifications. (f) Physician to direct city-county health unit; work entirely curative; will have two graduate nurses and part-time physician as assistants; college town of 14,000; Southwest. (g) Woman physician to conduct lay educational program in cancer control; considerable traveling; Midwest. PH11-2, Medical Bureau (Burneice Larson, Director), Palmolive Building, Chicago.

Situations Wanted

PUBLIC HEALTH NURSE—B.S. and Diploma in Nursing, M.S. in Social Administration, Western Reserve University; several years' experience as instructor; eight years, supervisor, public health unit consisting of five counties. For full details, write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago.

DENTIST who has specialized in public health is available; D.D.S., university medical school; several years' private practice; year of postgraduate training in public health hygiene with special emphasis on public health dentistry for which he received degree of M.S.P.H.; several years, state department of health. For further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago.

PUBLIC HEALTH PHYSICIAN is available; degrees from leading schools; several years, field worker, well known foundation; six years' successful administrative experience; eight years, health officer large city in the South; will go anywhere. For further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago.

BACTERIOLOGIST—B.S., M.D., D.Sc. degrees, with majors in bacteriology; certificate in public health, eastern university; several years' teaching experience, including professorship in bacteriology and pathology; able lecturer; now interested in public health appointment. For full details, write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago.

NEWS FROM THE FIELD

DRAFT INTERIM REPORT

Medical Planning Commission

A summary of the *Draft Interim Report* of the Medical Planning Commission (*British Medical Journal*, June 20, 1942) has been prepared for the *Journal* by Dr. Michael M. Davis, Chairman of the Committee on Research in Medical Economics, Inc.

To both physicians and laymen it is significant that a body of seventy physicians, which was appointed by the British Medical Association and which has worked for more than a year preparing this preliminary report, recommends a substantial reorganization of medical practice and closer relations of preventive and curative services. The *Report* has recently been considered and its major recommendations approved in principle by the Representative Assembly of the British Medical Association. It is now the subject of discussion in all local branches of the Association and will be revised by the Commission in the near future for official presentation to the profession, the Government, and the British public.

A small minority of the Commission favored a whole-time salaried medical service in which medicine would be put on a basis parallel to education as a function of the state. The majority of the Commission, however, recommended the extension of the national health insurance system (now covering little more than general practitioner service for employed persons) to include the services of specialists, and to cover the dependents of employed persons and other groups, or about 90 per cent of the whole population. This is substantially what the British Medical Association has itself advocated for more than a decade.

Of special interest to public health officers are the recommendations for the organization of medical practice:

". . . There is general agreement that co-operation amongst individual general practitioners in a locality is essential to efficient practice under modern conditions, though views vary on the form of the co-operation. The principle of the organization of general practice on a group or co-operative basis is widely approved. A convenient term for the focal point of co-operation is " health centre."

The organization and relationships of the proposed health center system are described in detail. The center would include a much wider scope of work than the district health centers which have been established by American health departments in a number of cities. The medical practice of the locality would be carried on within and from these centers, and from the hospitals with which they would be associated. Each center would be staffed by the local practitioners and affiliated specialists, with an organization corresponding to that of a well planned clinic.

The Commission is practically unanimous in recommending that the voluntary and governmental hospitals should be brought within a single framework of local and regional organization, preserving some autonomy in the management of individual institutions, but coördinating their functions and staffs under a general plan. It will be recalled that, in Britain, the medical officer of health is usually in charge of the local governmental hospital system as well as of the preventive services. Preventive and curative work for industrial employees is touched upon by the Commission and is to be the subject of a subsequent report.

" In view of the fact that the full adoption of the plan may be delayed for several reasons " . . . the Commission

suggests three steps for "immediate post war application," namely, the extension of the health insurance system, experimental health centers in some areas, and the creation of regional hospital councils with executive or advisory functions.

NEW OFFICERS OF THE AMERICAN SCHOOL HEALTH ASSOCIATION

The following new officers were elected at the business session of the American School Health Association, which was held in St. Louis:

President—C. E. Turner, Dr.P.H., Cambridge, Mass.
President-Elect—G. Morley Sellery, M.D., Los Angeles, Calif.
Executive Secretary-Treasurer—A. O. DeWeese, M.D., Kent, Ohio
Vice-Presidents—Arthur E. Turner, M.D., Chicago, Ill.; Gertrude Cromwell, R.N., Des Moines, Iowa.

NEW OFFICERS OF THE COLORADO PUBLIC HEALTH ASSOCIATION

At its Annual Meeting held in September, the Colorado Public Health Association elected the following new officers to serve for the forthcoming year.

President—John H. Fountain, M.D., Greeley, Colo.
Vice-President—Edna Burke, R.N., Denver Colo.
Secretary—Evelyn Horton, R.N., Denver, Colo.
Treasurer—Virginia Adkins, R.N., Englewood, Colo.

COURSE IN INDUSTRIAL MEDICINE ANNOUNCED BY NEW YORK POST-GRADUATE MEDICAL SCHOOL

The Director of the New York Post-Graduate Medical School, New York City, has announced a course on Industrial Medicine for five days, January 11 to 15, 1943, under the direction of Harry J. Johnson, M.D., of the Department of Medicine, assisted by Franklin Carter, M.D., Medical Director, *New York Times*, Walter Dannreuther, M.D., Professor of Clinical Gynecology; Fred B. Flinn, M.D., Associate Professor of Industrial Hygiene; Wilbur Duryea, M.D., Director Vascular Disease Clinic; George Ornstein, M.D., Director Seaview Sanatorium; Henry H. Ritter, M.D., Director Department of Traumatic Surgery; William Irish, M.D., Director Orthopedic Surgery; Charles Poindexter, M.D., Director Department of Cardiology, and Maurice Bruger, M.D., Director of Pathological Chemistry.

The course is planned as an intensive review in industrial medicine and is planned to give basic knowledge of the organization as well as instruction in the administration of an industrial medical department. Lectures and demonstrations will include dust hazards, lead and metal poisonings, industrial dermatoses, the problem of women in industry, industrial absenteeism, prevention of accidents and safety measures.

"COMMUNITY ORGANIZATION FOR HEALTH EDUCATION" AVAILABLE

It will be recalled that a Committee of the Public Health Education Section and the Health Officers Section of the American Public Health Association reported in 1941 under the title of Community Organization for Health Education. The purpose was to present significant experiences in community organization for health education which may be helpful to health departments, school systems, and private agencies. Twelve patterns of community organization are described as examples.

This report was prepared and distributed under a grant of the Charles H. Hood Dairy Foundation of Boston, Mass. A large edition was completely exhausted and a second edition has now been made available through the courtesy of the Charles H. Hood Dairy Foundation which will shortly be available at the same cost of 9 cents per single copy postpaid, or c.o.d. if ordered in quantity, charges being only the wrapping costs.

NUTRITION FOUNDATION, INC., NEW YORK, MAKES ADDITIONAL RESEARCH GRANTS

According to announcement by the Nutrition Foundation in November, 18 additional grants in aid totaling $46,600 were made, bringing the total of grants to 54 during the current year and including 33 colleges, universities, and medical centers. The present grants include projects at Northwestern University, University of Illinois, Notre Dame, and University of Wisconsin as well as the Universities of Virginia, Arkansas, Stanford, Rochester, Harvard, Cornell, Southern California, California, and the Alabama Polytechnic Institute.

Among the types of new studies supported by the Foundation are the isolation of unstable food factors, protein utilization during partial starvation, studies of radioactive iron, protection of the teeth afforded by specific nutrients, nutritive protection against infection, nutritive value of low-cost vegetables and nutritive protection of the blood vessels.

Contributions to the food industry to support basic research for the next five years were announced at $1,100,000. Charles Glen King, Ph.D., New York, is Scientific Director of the Foundation.

DR. WILE WILL CONDUCT TRAINING COURSE IN SYPHILIS

Udo J. Wile, M.D., Professor of Dermatology and Syphilology at the University of Michigan, Ann Arbor, has been commissioned Medical Director in the U. S. Public Health Service Reserve and has been assigned to active duty in the Division of Venereal Disease Control. According to the announcement, Dr. Wile will conduct a survey of new methods for the intensive treatment of syphilis and will supervise the quarantine hospitals which the Public Health Service and the states are developing in critical war areas. These hospitals are for the treatment of prostitutes and recalcitrant persons who are infected with syphilis and who are capable of spreading the disease. It was announced that the first class of physicians, nurses and record analysts would assemble in November at Ann Arbor for an intensive training course under Dr. Wile's direction.

NEW YORK STATE DEPARTMENT OF HEALTH PERSONNEL ENTER MILITARY SERVICE

Members of the Professional Staff of the New York State Department of Health who have entered military service between May 16 and October 22, 1942:

Hollis Ingraham, M.D., District State Health Officer, Navy
Robert L. Vought, M.D., Assistant District State Health Officer, Army
Mark M. Kroll, M.D., Medical Consultant in Social Hygiene, Army
John K. Miller, M.D., Associate Medical Bacteriologist, Division of Laboratories and Research, Army
James P. Palmer, M.D., Associate Cancer Gynecologist, State Institute for the Study of Malignant Diseases, Army

Junior Sanitary Engineers:
Milton Hill, Army
Ernest K. Smith, Navy
Stanley Stolz, Army

Public Health Nurses:
Marjorie Chalkley, Army
Anne Gruschow, Army
Mary Livingston, WAAC
Dorothy Peck, Army
Emma Shaffer, Army
Madeline Travis, Army
Norma Zenger, Army

Norman Robbins, Assistant Statistician, Army
Josephine Cunningham, Junior Statistician, WAVES

NEW YORK STATE DEPARTMENT PERSONNEL

The U. S. Public Health Service has loaned the New York State Department of Health two physicians, Dr. Edward T. Bloomquist, assigned to the Buffalo District Office, and Dr. Harry J. Schweigert, assigned to Albany.

ILLINOIS PUBLIC HEALTH ASSOCIATION ELECTS NEW OFFICERS

The Illinois Public Health Association has announced the election of the following officers and council members:

President, Wellington P. Shahan, Executive Secretary of the Illinois Tuberculosis Association; Vice-President, Clarence W. Klassen, Chief Sanitary Engineer, Illinois Department of Public Health; Secretary-Treasurer, Edward A. Pisczcek, M.D., M.P.H., Health Officer of Cook County. New members of the executive council elected for two-year terms are Florence Buchanan, R.N., Carlinville; Harold M. Cavins, Ph.D., Charleston; N. O. Gunderson, M.D., Rockford; S. V. Layson, Springfield; and Lawrence J. Linck and Lon W. Morrey, D.D.S., of Chicago. Council members for one year are Fannie Brooks of Urbana and Alice Miller of Chicago.

In addition to the officers and council members the Association carries over for another year on its executive council H. E. Babbitt, the former President, Mabel McClenahan, R.N., E. K. Musson, M.D., Howard J. Shaughnessy, Ph.D., and W. M. Talbert, M.D.

A PUBLIC DEMONSTRATION OF THE RECONSTITUTION OF MILK

A demonstration took place in Long Island City on October 13, under the auspices of the Medical Information Bureau of the New York Academy of Medicine, of the reconstitution of milk from milk powder and concentrated milk fat produced by a new technic of dehydration.

Although the dehydration and subsequent reconstitution of milk by the addition of water is not new, the processes involved in this demonstration were said to be new, and the product was said to be of superior quality. This process of dehydration treats the fat and the skim milk separately. By heating the fat above 180° F. its autoxidizing enzymes are destroyed and it is reduced to an oil which, when properly packed, can be preserved indefinitely without refrigeration. The skim milk is dried at temperatures below 160° F., at which point the proteins are damaged. Moisture content can be reduced to less than 3 per cent, which extends its keeping qualities for many months. Through the use of suitable emulsifying equipment the concentrated fat and the dry powder can be recombined with water to produce cream or milk which can be distinguished from the natural product only with difficulty.

Pointing to the importance of this method in the emergency, the Academy states that this process can be completed in any ice cream plant and that milk and cream identical with fresh products can be made at any time in large volume by ice cream plants adjacent to army bases and war industries, thus making satisfactory milk and cream available in localities where they are at present difficult or impossible to obtain.

DR. S. J. CRUMBINE HONORED BY KANSAS SOCIETY OF NEW YORK

Samuel J. Crumbine, M.D., of New York, was honored on November 12 by a dinner sponsored by the Kansas Society of New York in honor of his 80th year. Among the speakers were Charles P. Taft, Director of Defense Health and Welfare Services, Federal Security Agency, Washington; Payne Ratner, Governor of Kansas, and Senator Henry J. Allen of Kansas. Dr. Crumbine served as state health officer for 19 years beginning in 1904. For six years he was dean of Medicine at the University of Kansas and for ten years general executive of the American Child Health Association. Special mention was made of the efforts on Dr. Crumbine's behalf to suppress the common drinking cup and the house fly.

ENGINEERS' STAG DINNER AT ST. LOUIS

The annual Engineers' Stag Dinner, with W. E. Orchard as the Master of Ceremonies, was a success again this year. This is an event always looked forward to by the engineers. Opening with a serious note from Dr. Abel Wolman and closing with a serious note from Mr. Orchard, it was packed full of fun and interesting entertainment.

Something of a record was set this year in attendance, with a total figure of 172 present and one of these a lady sanitary engineer from the Rhode Island State Health Department.

The feature event of the evening was a question and answer contest with "greenback" awards and penalties. When the smoke cleared away, many had received awards of crisp one and two dollar bills from the pocket of the Master of Ceremonies, and the winning jackpot prize of $50 went to the table whose representative stood up the longest under the barrage of questions. A balance of $77.85 remained in the jackpot and was given to the local chapter of the Red Cross by the Master of Ceremonies, as a gift from the Engineers' Stag Dinner.

PERSONALS

Central States

MATTIE J. BULLARD, M.D., of Gary, Ind., has been appointed City School Physician, to succeed CHARLES P. ANDERSON, M.D., of Gary, who has entered Army service.

DAVID D. CARR, M.D., C.P.H.,* Health Officer of Topeka, Kans., has been placed in charge of the new health unit combining the Health Departments of Topeka and Shawnee County.

ROBERT C. FARRIER, M.D.,* Director of the East Side Health District, East St. Louis, Ill., has been appointed Defense Zone Health Officer for St. Clair County, a wartime measure.

MARIO McC. FISCHER, M.D.,† Health Officer of Duluth, Minn., has been appointed Medical Director of St. Louis County. He will serve part time and will continue his duties as City Health Officer.

NORDAHL O. GUNDERSON, M.D.,* of Rockford, Ill., has been appointed Defense Zone Health Officer for Winnebago County.

HERMINA H. HARTIG, M.D., has been appointed Acting Director of Hygiene and Health Education of Minneapolis, Minn. ARTHUR E. KARLSTROM, M.D.,† who has been Director since 1940, has resigned to devote his entire time to private practice.

FRANK M. HARTSOOK, M.D., of Cardington, Ohio, has been named Health Commissioner of Morrow County.

ROBERT M. HEILMAN, M.D., of Lyons, Neb., U. S. Public Health Service, has been appointed head of the newly established Division of Industrial Hygiene, Topeka, Kans., created to provide consultant service for industries of the state of Kansas. The Kansas Industrial Hygiene Service has, since its inception 5 years ago, been a part of the sanitary engineering section of the State Board of Health at Lawrence.

ROBERT H. HOECKER, M.D., has resigned as Health Commissioner of Mount Vernon, Ohio, to enter Army service.

LAURENCE E. JEWETT, M.D., has been appointed Health Officer of Wabash, Ind., succeeding ROBERT M. LaSALLE, M.D., who resigned to enter Army service.

DANIEL D. JONES, M.D., of Berne, Ind., has been appointed Health Officer of Adams County.

JOHN L. LAVAN, M.D., DR.P.H.,* who since May, 1941, has been on leave of absence as Commander in the Medical Corps, U. S. Naval Reserve, has resigned as Commissioner of

* Fellow A.P.H.A.
† Member A.P.H.A.

Health of Toledo, Ohio, and has accepted an appointment as Assistant Medical Director of the National Foundation for Infantile Paralysis, New York, N. Y.

FRANK E. MCCORD, M.D., formerly of Topeka, Ill., has been appointed in charge of the special wartime county health department established for Morgan County, in Jacksonville.

SUMNER M. MILLER, M.D.,* of Peoria, Ill., has been appointed Defense Zone Health Officer for Peoria County.

JAMES A. OLSON, M.D.,† of Flint, Mich., Director of the Mott Foundation Children's Center and Director of Health for the Flint Public Schools, has been appointed Acting Executive Health Officer of Flint.

CHESTER L. PUTNAM, M.D., M.P.H.,† of Manchester, Ia., has been appointed Director of Local Health Services for the Iowa State Department of Health, effective September 1, succeeding the late MARVIN F. HAYGOOD, M.D.,† of Des Moines.

C. A. SELBY, M.D., of North Platte, Nebr., has been appointed by Governor Dwight Griswold of Nebraska as State Director of Health. He is a Veteran of the Medical Corps of World War I; Past President of the State Medical Association, and a Fellow of the American Medical Association. He has been active in state and civic matters relating to public health. He succeeds A. L. MILLER, M.D.,† who was elected to the U. S. Congress in the recent election in Nebraska, to represent the 4th District.

RAYMOND G. TUCK, M.D., of Royal Oak, Mich., District Health Officer in Southern Oakland County, has been appointed Health Officer of Hazel Park; he will continue to serve as District Health Director.

JOHN P. WALSH, M.D.,† of Greenview, Ill., has been appointed in charge of the special wartime county health department established for DuPage County, in Wheaton.

Eastern States

FREDERICK EBERSON, PH.D., M.D.,* resigned July 31 from his position of Medical and Research Director, National Drug Company, Philadelphia, Pa., to become Pathologist, Chief of Laboratory Service, U. S. Veterans Administration Facility, Pittsburgh, Pa. He was formerly Pathologist and Director of Laboratories, Gallinger Hospital, Washington, D. C.

LEONARD PARENTE, M.D., M.P.H.,† has been appointed as Medical Director and Adviser for the Connecticut State Department of Public Welfare. Dr. Parente started work in this department on September 1, 1942, and his duties will be those of organizing and administering the State Medical Care Program for the Public Welfare Department of Connecticut.

JOSEPH A. RANDAZZO, M.D.,† has been commissioned as a Passed Assistant Surgeon in the Reserve of the U. S. Public Health Service and has been assigned to the Division of Industrial Hygiene in the Connecticut State Department of Health, Hartford. Dr. Randazzo formerly resided in Bath, Maine.

ALEXANDER H. STEWART, M.D.,† of Harrisburg, Pa., Acting Secretary of the State Board of Health since 1941, and Deputy Secretary from 1939 to 1941, has been appointed Secretary.

Southern States

JAMES H. ASHCRAFT, M.D., of Reform, Ala., has been appointed Health Officer of Fayette and Pickens Counties.

DORIS L. A. BALDRIDGE, M.D., of Conway, Ark., has been appointed Health Director of Faulkner County.

* Fellow A.P.H.A.
† Member A.P.H.A.

CHARLES B. CRITTENDEN, M.D.,* of Louisville, Ky., resigned on July 2 as Director of the Division of Maternal and Child Welfare of the Kentucky State Health Department, due to ill health. ALICE D. CHENOWETH, M.D., formerly of Rosemont, Pa., has been named to succeed Dr. Crittenden.

ARTHUR C. CURTIS, M.D., of State Sanatorium, Ark., has been appointed Director of the Division of Tuberculosis Control of the Arkansas State Board of Health.

ALBERT S. DIX, M.D.,† of Opelika, Ala., has been appointed Director of Communicable Disease Control of the Mobile City and County Health Unit, succeeding ISAAC C. SUMNER, M.D.

HOWARD W. ENNES, JR., A.B.,† formerly in charge of venereal disease education for the U. S. Public Health Service, Washington, D. C., is now on duty with the Division of Preventive Medicine, Bureau of Medicine and Surgery of the Navy, as an Ensign H-V(S), USNR. He has been replaced in the U. S. Public Health Service by JUDSON HARDY.

GEORGE SELLERS GRAHAM, JR., M.D., of Birmingham, Ala., has been placed in charge of the health unit in Green County.

EDWIN N. HALLER, M.D., of Mobile, Ala., has been appointed Health Officer for DeKalb County.

HUGH C. HENRY, M.D., of Richmond, Va., Director of State Hospitals, has been appointed Commissioner of Mental Hygiene and Hospitals, a newly created position provided in the state government reorganization act, effective July 1.

EDWARD M. HOLMES, JR., M.D., M.P.H.,* for several years Director of the Division of Venereal Disease Control of the Virginia State Department of Health, Richmond, has been assigned as Venereal Disease Control Officer at Randolph Field, Tex. WALLACE E. BAKER, M.D., of Petersburg, assistant to Dr. Holmes, has been named Acting Director of the Division of Venereal Disease Control for the duration.

WILLIAM R. KELSAY, M.D.,† of Monticello, Ky., has been named Health Officer for Clinton and Cumberland Counties in addition to Wayne County. He succeeds PAUL D. MOORE, M.D., of Albany, who has been transferred to Casey County, where he succeeds JAMES T. DUNCAN, M.D.,† formerly of Columbia who has gone to Charleston, W. Va.

ALEX C. MCDOUGAL, M.D., of Savannah, Tenn., is the new Health Officer of Marengo County.

JAMES O. NALL, M.D.,† of Marion, Ky., has resigned as Health Officer of Livingston County to accept a District appointment in Crittenden, Caldwell, and Lyon Counties. He has also resigned as secretary of the Livingston County Medical Society. The health unit has been combined with the one in Marshall County, with SAMUEL L. HENSON, M.D., of Benton, as full-time Health Officer.

ANTHONY P. RUBINO, M.D., formerly of Key West, Fla., of the U. S. Public Health Service, has been appointed Medical Officer in Charge of the United States Marine Hospital, Memphis, Tenn. He succeeds EDWIN H. CARNES, M.D., who was transferred to Alaska. Dr. Rubino has been a member of the Public Health Service since 1926.

JACOB LELAND TANNER, M.D., of Henderson, Ky., has been appointed Health Officer of Washington County.

DONALD B. THURBER, M.D., of Carlisle, Ky., has been appointed Director of the Tri County Health District consisting of Trimble, Carroll, and Gallatin Counties.

WALTER E. WILKINS, M.D., of Raleigh,

* Fellow A.P.H.A.
† Member A.P.H.A.

N. C., Director of the Division of School Health Service for the North Carolina State Board of Health, has been made Consultant in Nutrition to the Office of Defense Health and and Welfare Services in Washington.

Western States

LUNSFORD D. FRICKS, M.D., of Seattle, Wash., has been appointed Health Officer of the Helena and Lewis and Clark Counties Health Unit, succeeding LEO F. HALL, M.D., of Helena, who has resigned on account of ill health.

WILLIAM L. JACKSON, M.D., of Burlington, Wash., has been named Health Officer of Skagit, to succeed WILLIAM V. KING, M.D., JR.

GUY W. KENNICOTT, M.D., has resigned as Health Officer of Chehalis, Wash.

PHILIP D. KETCHUM, M.D., Health Officer of Laramie County, was recently appointed Health Officer of Cheyenne, Wyo., succeeding WALTER S. KOTAS, M.D.,† who entered Army service.

DORSEY S. LENZ, M.D., formerly of Edgerton, Wyo., has been appointed Health Officer of Campbell County.

EMIL E. PALMQUIST, M.D.,† of Port Angeles, Wash., Health Officer of Clallam County-City Health Unit, was elected the President of the Washington State Public Health Association at its recent annual meeting.

DEATHS

DR. HORTON CASPARIS, of Nashville, Tenn., died suddenly during the week of November 8, at the age of 51.

S. S. GOLDWATER, M.D.,* formerly Commissioner of Hospitals of the City of New York, died October 22, at the age of 69.

CONFERENCES AND DATES

American Association for the Advancement of Science. New York, N. Y. December 28–January 2.

American Association of State Highway Officials. St. Louis, Mo. December 7–9.

American Association of School Administrators. St. Louis, Mo. February 26–March 2, 1943.

American Library Association — Midwinter Conference. Chicago, Ill. December 28–31.

American Public Welfare Association. Baltimore, Md. December 11–13 (tentative).

American Society for Public Administration. Chicago, Ill. December 27–28.

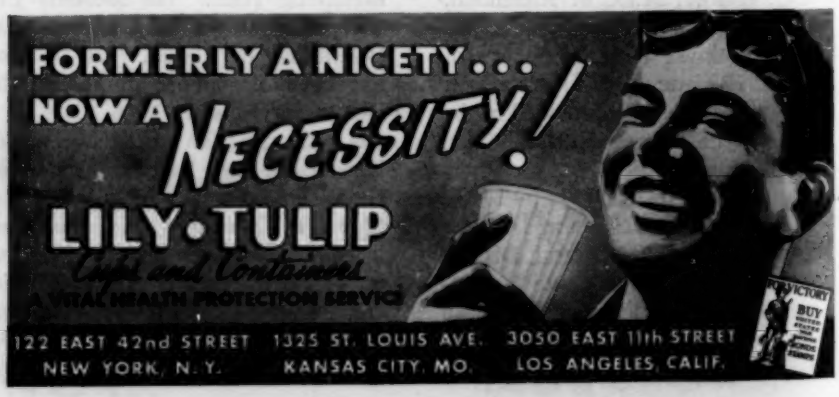
American Society of Anesthetists. New York, N. Y. December 10.

American Standards Association. New York, N. Y. December 10.

American Statistical Association. Cleveland, Ohio. December 29–31.

American Society of Civil Engineers—Winter Meeting. New York, N. Y. January 19–22, 1943.

American Water Works Association—New York Section—Mid-Winter Meeting.



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